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United States
Department of Agriculture

Forest Service

Lolo
National Forest

February, 1986

The Lolo National Forest Plan

Final Environmental Impact Statement

The Lolo National Forest Plan
Final Environmental
Impact Statement

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COVER: Lolo Peak, a prominent landmark just south of Missoula, towers above Lolo Creek at an elevation of 9,096 feet. The Lolo National Forest, which includes the original Lolo Forest Reserve established in 1906, is named after this mountain.

FINAL ENVIRONMENTAL IMPACT STATEMENT

on the

Lolo National Forest

Land and Resource Management Plan (Forest Plan)

Missoula, Mineral, Sanders, Granite, Powell, Lewis and Clark,
Flathead, Ravalli, and Lake Counties,
Montana

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Abstract: This final environmental impact statement describes six alternatives and the Proposed Action (Alternative d) for managing the land and resources on the 2.1 million-acre Lolo National Forest. The alternatives include a "no action" alternative (Alternative a - a continuation of the present course of action), and range from a high consideration for wilderness values to optimizing the utilization of renewable resources. Wilderness options range from 916 thousand acres (Alternative g) to 140 thousand acres (Alternative e). Land suitable for timber management ranges from 1,402 thousand acres (Alternative c) to 956 thousand acres (Alternative g). Wildlife habitat effectiveness and productivity varies by alternative according to the mix of wilderness/roadless management and resource extraction activities, the ability to manipulate vegetation, and the ease of or contraints on access.

The management situation and benchmark analyses identified the wide range of alternatives possible. The mix of management options by alternative result in equally wide ranging levels of goods and services. Changes to the Draft Environmental Impact Statement and Forest Plan as a result of public involvement are identified and summarized throughout this Statement.

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SUMMARY

I. PURPOSE AND NEED FOR ACTION

This FEIS describes a proposed action and alternative actions for management of the land and resources of the Lolo National Forest. It describes and documents the analysis of each alternative, and discloses the environmental consequences of its implementation. The proposed action is the basis of the proposed Lolo National Forest Land and Resource Management Plan, which is a separate document.

This FEIS was developed under direction from the National Forest and Rangeland Renewable Resources Planning Act (RPA), the National Forest Management Act (NFMA), the National Environmental Policy Act (NEPA), and their implementing regulations.

A. Planning Area

The Lolo National Forest is located in western Montana and includes 2,112,597 acres of National Forest System lands, roughly 120 miles long and between 40 and 80 miles wide. The Forest Plan covers 2,083,192 acres of land, with the remaining 29,405 acres administered and planned by the Deerlodge National Forest. The Forest lies in portions of nine counties with the major population and trade center located in Missoula County.

There are four designated wilderness areas on the Forest with a gross area of 145,734 acres, and 36 roadless areas totalling 776,190 net National Forest System acres.

An annual harvest of 60 to 80 million board feet furnishes timber products to regional and national markets, and helps sustain the local economy.

B. Issues, Concerns, and Opportunities

The following public issues and management concerns define the points of emphasis around which development of the Forest Plan pivoted:

RANGE

Issue 1. Where and how much livestock grazing can occur on the Forest and be compatible with water quality, fisheries, timber management, soils, vegetation, and recreation?

Issue 2. When conflicts arise between livestock grazing and wildlife habitat, where should emphasis be placed?

Issue 3. What are the social and economic aspects of livestock grazing on the Lolo National Forest?

Management Concern 1. What investments should the Forest make to maintain grazing capacity and minimize conflicts with other uses?

Management Concern 2. How will uses outside the Lolo National Forest be affected by increased or decreased livestock grazing on the Forest?

Management Concern 3. To what extent will the Forest consider the use of herbicides to accomplish noxious weed control?

RECREATION

Issue 1. How much roadless, nonwilderness recreation opportunity should the Forest provide and where should it be located?

Issue 2. Where and what kinds of access are needed to provide for Forest users' recreation needs?

Issue 3. What kinds of access and facilities (trails, toilets, plowed parking lots, unloading ramps, etc.), should be provided to meet the Forest's dispersed recreation needs?

Issue 4. What is the Forest's role in meeting demands for developed recreation (campgrounds, picnic grounds, ski areas, marinas, etc.) and where should developed sites generally be located?

Issue 5. How much land area should the Forest provide for ORV use and where should it be located?

Issue 6. How should recreation in the Rattlesnake drainage be managed?

Issue 7. How can the Forest provide opportunities for people to enjoy fish and wildlife species, quality hunting and fishing, seeing and hearing animals of various kinds?

Management Concern 1. Recreation opportunities need to be broader and consider the physically handicapped, elderly, and a range of opportunities and levels of challenge for Forest users.

Management Concern 2. There is a need for more coordinated planning for metropolitan area recreation; e.g., areas of high use in the Missoula area.

TIMBER

Issue 1. What level of sustained annual yield of timber products should the Lolo provide that will maintain Forest productivity and still meet local, regional, and national needs?

Issue 2. Where and to what degree of intensity can timber management be applied to ensure that the best sites are managed to meet future needs?

Issue 3. In what ways can the Forest achieve better utilization of wood products?

Issue 4. To what extent will economics be a factor in determining sale feasibility?

Management Concern 1. There is a need to improve timber utilization in order to increase yields, reduce fuels, and lower management costs.

Management Concern 2. There is a need for investment guides for marginal sites on the Forest.

Management Concern 3. To what extent will the Forest consider the use of herbicides to accomplish roadside maintenance and various silvicultural objectives.

Management Concern 4. The Forest needs to establish criteria for the use of timber harvest systems.

Management Concern 5. There is a need to develop a means of integrating all resource goals when preparing reforestation plans, especially for backlog areas.

WATER AND SOILS

Issue 1. How can the Forest maintain watershed protection on lands with intermingled ownership?

Issue 2. Considering that water quality is an indicator of how the land responds to management, what level of water quality should the Forest strive to maintain in various drainages?

Issue 3. To what extent should areas on the Forest such as steep slopes, granitic soils, and glacial and lake sediments be developed?

Management Concern 1. There is a need for a basic policy statement on water quality standards. This statement will provide an opportunity to explain to what extent water quality is an indicator of proper management, to explain State and Federal water standards to the public, and to identify areas on the Forest that need special treatment to either maintain or improve water quality.

Management Concern 2. There is a need to identify streams of high value for recreation and fisheries where water rights need to be established and quantification determined.

Management Concern 3. There is a need to consider basic soil productivity, especially relevant to activities that cause compaction.

WILDLIFE

Issue 1. How much land suitable for big-game habitat should be allocated for this use, and to what extent should features such as wallows, security areas, and winter range be protected?

Issue 2. What are the geographic limits of essential habitat for grizzly bear and other threatened and endangered species, and what management activities are compatible with their habitat requirements?

Issue 3. How much land area on the Forest is needed in various types and ages of vegetation to maintain diverse habitats suitable for fish, game, and nongame species of wildlife?

Issue 4. How can the impact of human activities on wildlife be mitigated?

Management Concern 1. The Forest needs to develop long-range wildlife habitat management objectives that include the rationale for road closures.

AQUATIC ENVIRONMENT/FISHERIES HABITAT

Issue 1. Where and how much aquatic environment/fisheries habitat on the Forest should be improved?

Issue 2. How can the Forest continue to protect the fisheries, wildlife, and recreation values in the Rock Creek Blue Ribbon trout stream? (This had been an issue in the past but was not addressed in the original FEIS because the public did not identify it at that time. However, because of recent project planning in the drainage and the Bonneville Power Administration 500-kV powerline, it is addressed as a public issue.)

Management Concern 1. The Forest needs specific objectives for riparian zone management because of high resource values and conflicting uses.

LANDS

Issue 1. In order to improve National Forest management, which lands should the Forest identify for acquisition or disposal through purchase or exchange?

Issue 2. In the event that powerlines or pipelines must be located on the Forest, where would they be least likely to impact resource values and uses?

Management Concern 1. The Forest needs guidelines on the issuance and administration of special use permits.

MINERALS

Issue 1. Where on the Lolo National Forest are there areas of mineral potential high enough to influence land allocation?

Issue 2. Where on the Forest should the Forest Supervisor recommend approval of oil and gas lease applications, and with what types of restrictions? (This had been identified as a management concern, but because of the growth in interest shown for oil and gas leasing over the past year, the topic has become a public issue.)

FIRE

Issue 1. Where and how much fire can be used to achieve resource management objectives within air quality guidelines and standards?

Management Concern 1. Fire use and control programs need to be compatible with the role of fire in various ecosystems.

Management Concern 2. The Forest needs a cost-effective fire suppression program responsive to the revised fire management policy.

ROADS

Issue 1. What standards of roads are needed to support resource management activities on the Forest?

Issue 2. How much roading is needed on the Forest to provide adequate access while maintaining wildlife and fish habitat, visual quality, water quality, and soil stability?

Issue 3. How much road closure should occur and what types of roads should be left open to the public?

Management Concern 1. Transportation planning needs to be more responsive to and better coordinated with logging systems.

SOCIAL AND ECONOMIC

Issue 1. How will specific management allocations in the Forest Plan affect local community economics?

VISUAL QUALITY

1. How much change from the natural-appearing landscape should take place and where should it occur, considering the public's social and economic needs?

WILDERNESS

1. What roadless areas should be recommended for wilderness on the Lolo National Forest?

2. How should the roadless areas that are not recommended for Wilderness be managed?

II. ALTERNATIVES

Alternatives were developed to respond to public issues, management concerns, opportunities, cost efficiency and net public benefits.

A. Alternative Development

Once the issues were finalized, information was developed to determine the Forest's capability to respond to each issue through the analysis of the management situation. Base resource data, economic information, and environmental/legal constraints were examined. Benchmarks were developed and analyzed to measure resource and economic interrelationships and output ranges for alternative development.

The analysis of the management situation determined resource supply potentials by establishing minimum and maximum production levels called benchmarks. A level was also established from which the costs and effects of applying regulations and policy constraints were measured. Production capabilities were determined for single resources and for a set of multiple resource outputs that maximized present net value. This analysis established the benchmark levels required by NFMA Regulation 219.12e.

There are several alternatives considered but eliminated from detailed study. Included is the alternative that addressed the Resource Planning Act objectives. The Lolo Forest cannot meet these objectives without incurring unacceptable results as discussed in Chapter II.

B. Description of Alternatives

In the development of alternatives, those that are required include: one that maximized timber production and most market opportunities while meeting policy requirements such as the maximum modification visual quality objective; one which optimized nonmarket opportunities such as roadless, wilderness, recreation, visual quality, fisheries, and wildlife; and the current direction.

These alternatives were examined to determine where they fit in a range of outputs expressed by the benchmarks, and how well they respond to the issues, including the roadless evaluation. Additional alternatives were then identified that would complete an adequate range of outputs for analysis.

The alternatives are:

1. Alternative a - Current Direction

The goal of this alternative is to continue management direction as set out in plans formulated and approved prior to passage of the National Forest Management Act, and included in existing policies, standards, and guidelines. Current budget levels are assumed.

Of the current roadless area, 27 percent is recommended for additional wilderness, 21 percent allocated to roadless management, and approximately 52 percent available for development.

The allowable sale quantity for the first decade is 111 MMBF/year. Outputs then increase to the allowable sale quantity of 133 MMBF/year in decade 2 which approximates 66 percent of the long-term sustained yield capacity.

Decades 1 through 12 provide 100 percent of the existing big game summer and winter range productivity.

2. Alternative b

This alternative was designed to emphasize nonmarket uses, especially roadless management, visual quality, wildlife, fish habitat, and water quality. Timber, livestock grazing, and minerals opportunities are consistent with these objectives.

Of the current roadless area, 27 percent is recommended for additional wilderness in this alternative, with 49 percent allocated to roadless management, and approximately 24 percent available for development.

The first decade allowable sale quantity of 104 MMBF/year is 6 percent below the current level. Output increases to the allowable sale quantity of 125 MMBF/year in the second decade which is 72 percent of the long-term sustained yield capacity.

Big-game winter range is reduced by 25 percent over the existing situation and summer range is increased by 50 percent.

3. Alternative c

This alternative was designed to emphasize timber and mineral opportunities and respond to significant components of the wilderness and wildlife habitat issues that can be achieved at little cost to market outputs.

Of the current roadless acres on the Forest, 27 percent is recommended for additional wilderness in this alternative, with 19 percent allocated to roadless management and approximately 54 percent available for development.

Big-game winter range is reduced to 85 percent of the existing situation and summer range is increased by 35 percent of the existing situation.

4. Alternative d - Proposed Action

This alternative was designed to resolve major issues and management concerns, with a mix of both market and nonmarket uses and outputs. Emphasis is on roadless recreation, wilderness, wildlife habitat, fisheries, visual quality, and timber issues.

Of the current roadless area, 29 percent is recommended for additional wilderness in this alternative, with 23 percent allocated to roadless management and approximately 48 percent available for development.

The first decade allowable sale quantity of 107 MMBF/year is 4 percent below the current level. Outputs then increase to about 131 MMBF/year in the second decade and 177 MMBF in the eleventh decade which approximates long-term sustained yield capacity.

Big-game winter range production is increased by 29 percent over the existing situation and summer range is increased by 25 percent.

Alternative d1 - departure

This departure includes acceleration of timber harvest in the first decade to contribute to the national need for lumber used in housing. The first decade is similar to the Proposed Action, then increases to its peak in the fourth decade. Even flow is reached at the tenth decade.

Elk forage production and populations would average 25 percent less than the Proposed Action during the first and last one and one-half decades, for a total of 30 years. The intervening decades would have a higher forage production than the Proposed Action.

5. Alternative e

This alternative was designed to emphasize timber outputs and livestock use to be achieved in the most cost effective manner, and does not respond to the wilderness issue. It results in an extensive road system, encouraging opportunities for minerals exploration, development, and roaded recreation. This alternative is useful in evaluating the total range of tradeoffs.

Of the current roadless area, no additional wilderness is recommended in this alternative, with 39 percent allocated to roadless management and approximately 61 percent available for development.

The first decade allowable sale quantity of 107 MMBF/year is 4 percent below the current level. Outputs then increase to the allowable sale quantity of 140 MMBF/year in the 2nd through 10th decades and 191 in the 11th decade which approximates long-term sustained yield capacity.

The winter range productivity for big game decreases to 73 percent of the existing situation. Summer range productivity is increased by 13 percent.

6. Alternative f

This alternative was designed to emphasize nonmarket uses, especially wilderness, roadless recreation, and wildlife diversity and aquatic habitat. Timber management is confined to sites that do not have soils, wildlife, or in most cases, visual constraints. This alternative was also developed to include roadless areas with particular public interest for wilderness, to provide for geographical distribution of wilderness areas across the Forest, and provide for representation of major ecosystems found on the Lolo.

Of the current roadless acres on the Forest, 51 percent is recommended for additional wilderness in this alternative, with 10 percent allocated to roadless management and approximately 39 percent available for development.

The first decade allowable sale quantity of 107 MMBF/year is 4 percent below the current level. Outputs then gradually increase to the allowable sale quantity of 129 MMBF/year in the 3rd decade and 171 MMBF in the 11th decade which approximates long-term sustained yield capacity.

The productivity of big-game winter range drops to 67 percent of the existing situation and summer range productivity increases 7 percent.

7. Alternative g

This alternative was designed to maintain or increase market outputs from currently roaded lands and respond to nonmarket issues on roadless areas. All inventoried roadless acreage remains unroaded and recommended for wilderness. Timber management is confined to presently developed sites, displaying the least acreage available for timber harvest of all the alternatives.

Of the current inventoried roadless acres on the Forest, 100 percent is recommended for additional wilderness.

The first decade allowable sale quantity of 90 MMBF/year is 19 percent below the current level. Outputs then increase to the allowable sale quantity of 120 MMBF/year in decade 2, 126 MMBF in the 10th decade, and 174 MMBF in the 11th decade.

The big-game winter range productivity decreases to 64 percent of the existing situation, and summer range decreases to 82 percent of the existing situation.

III. AFFECTED ENVIRONMENT

A. Physical, Biological, Social, and Economic Settings

1. General Setting

The Rocky Mountain Region, of which the Forest is a part, is characterized by generally north- to south-oriented mountain ranges separated by flat valley floors and foothills. Atmospheric conditions, as modified by aspect and slope, become progressively cooler and more humid in the transition from lower to higher elevation. Climatic zones range from the semiarid and relatively warm valley bottoms through a broad range of cool, moist coniferous forests to the cold, moist subalpine and alpine region characterized by bedrock escarpments, coarse rock debris, and cirque lakes and headwalls carved by alpine glaciation in the recent geologic past.

2. Physical Setting

a. Topography

The Forest is approximately 120 miles long and 40 to 80 miles wide, segmented by the major drainages. The Missoula Valley acts as the hub of these National Forest segments. The Clark Fork, the major river in the area, flows from the southeast to the northwest and generally bisects the Forest. The Bitterroot, Blackfoot, St. Regis, and Thompson Rivers constitute the primary tributaries to the Clark Fork. Other significant streams flowing into the Clark Fork include Rock, Fish, Rattlesnake, and Ninemile Creeks. The rivers and streams drain a highly dissected and steep terrain. Although most of the land is heavily timbered, many southerly-facing low-elevation slopes have a grassy, park-like appearance. Mountains rising in excess of 7,000 feet elevation usually exhibit the effect of alpine glaciation. Slopes on the Forest are variable. Gentle slopes are found along stream bottoms and on ridge tops, with intervening lands steep to very steep.

b. Precipitation

The Missoula Valley itself is semiarid with annual precipitation of about 14 inches. Precipitation increases with elevation. Nearly one-half of the 42 inches of average annual precipitation that falls as rain and snow on the Lolo National Forest runs off as high-quality streamflow. Over two-thirds of the precipitation falls as snow which is the primary source for ground water recharge and streamflow.

c. Visual

About 30 percent of the Forest outside of wilderness is considered to have distinctive scenic quality. Portions of the Forest are seen by about 100,000 residents -- about half the population of western Montana. In addition, parts of the Forest can be viewed from about 280 miles of Federal or State highway corridor, with a daily average use of around 20,000 vehicles. At the present time, about 80 percent of the Forest has a relatively natural appearance.

3. Biological Setting

The vegetative communities are identified and described with seven vegetative groups. Habitat types (Pfister et al., 1977) express different combinations of climate, soils, and topography that are directly related to species occurrence and productivity, and grouping of these types is convenient for broad-base land planning. Habitat types having similar site indexes and management implication were grouped for the Lolo National Forest (On and Losensky, 1976). These group range from nonforest (rock, meadow, grassland), through the dry-warm and dry-cool Douglas-fir types, moist spruce-fir types, to the cool and cold alpine fir types. Fourteen coniferous species or species groups are found on the Forest. There are no known threatened or endangered plant species within the boundaries of the Forest.

4. Social and Economic Setting

The Lolo National Forest lies primarily within Mineral, Missoula, and Sanders Counties. Missoula County is the most densely populated of the counties and the city of Missoula serves as a trade center for these and other western Montana counties. Other population centers in the three counties are much smaller than the city of Missoula. Employment in Missoula County accounts for 85 percent of the total employment in the three-county area.

a. Population

Missoula County, with a population of 76,016 is the most populated of the three principle counties. Sanders County has a population of 8,675, while Mineral County has a population of 3,675. The population is predominantly white, with American Indian comprising the largest minority group.

b. Economy

Forest products are the economic backbone of western Montana. The industry is the largest component of the economic base in these counties. Sanders and Mineral Counties are dependent upon wood products for over half their economic base. Employment and earnings figures in basic industries for Missoula County show that the local economy is heavily dependent on the following industries: wood products, University of Montana, Federal Government, wholesale and retail trade, and transportation.

The future outlook for employment and earnings in the economies of Mineral, Missoula, and Sanders Counties is uncertain largely because of the dependence on few basic industries. Persons who choose to live in Montana for "quality of life" can expect a 15 percent reduction in earnings from the national average per capita income.

The Lolo National Forest is of varying importance to different groups of people for different resource uses. At all levels of interest, the production of timber is probably the most significant. This resource use certainly is of the greatest economic importance followed closely by water production. Livestock forage production and recreation use, including that associated with the fish and wildlife on the Forest, are of lesser economic importance.

c. Lifestyles

There are several social values which are important to people affected by the Forest. Certain emotional and/or spiritual levels are related to the wildland. The "natural experience" provides an escape from normal daily routines and contributes to a relative state of inner peace.

Also important is the sense of freedom in one's life, without being subjected to controls by others. To many users, access to the Forest and the use of its resources are an important aspect of self-sufficiency.

The influx of people with varying backgrounds and philosophies tends to decrease the cohesiveness of the community. The Forest faces the dilemma of mitigating the consumption versus preservation conflict. Traditional use and ownership of the land for ranching, logging, or other forms of long-standing use versus development are also addressed as concerns by individuals.

d. Forest Receipts

The Lolo Forest's three primary counties received the following payments (in thousands of dollars) from the Lolo National Forest receipts for fiscal years 1981, 1982, and 1983:

Receipts (M$) 1981 through 1983

Fiscal Year	Mineral	Missoula	Sanders
1981	330.5	254.8	247.6
1982	169.7	130.8	127.1
1983	213.8	164.9	160.2

These amounts were determined from total Forest receipts that include timber, range, minerals, recreation, and land uses.

e. Forest Employment and Budget

Employment in work-years was 461 in 1981, 436 in 1982, 426 in 1983, and is currently approximately 420. The average annual budget for the past 5 years $16.1 million. Excluding inflationary effects, the annual budget increased until about 1981 and has been decreasing since that year.

B. Current Resource Situation

1. Recreation

Total recreation use on the Forest has been increasing steadily, with the majority of use associated with dispersed recreation activities. A variety conflicts arise from time to time between groups using the Forest for recreation. Examples include conflicts between motorized and nonmotorized visitors, hikers and horsemen, snowmobiles and cross-country skiers, or powerboats and paddle craft. Private concessionaires provide both facilities and services to accommodate a wide variety of recreation activities on the Forest, and the Forest has suitable areas potentially available for expansion concessions.

The City of Missoula is somewhat unique from the standpoint of having high quality recreation land at its doorstep. Areas such as Pattee Canyon, Blue Mountain, Fort Fizzle, and the lower Rattlesnake fill a variety of recreation needs for a wide range of activity. While these areas fill an important role for many people, they are expensive to manage and maintain due to vandalism, cleanup, and law enforcement needs.

Recreation use is measured by recreation visitor days (RVD's) -- where one RV equals 12 hours of use or occupancy.

a. Dispersed Recreation

In FY 1983, use of dispersed areas totaled approximately 960,000 RVD's or 80 percent of the total Forest use. Much of this use takes place near population centers or in the vicinity of developed sites and resorts. The more popular activities include hunting, fishing, hiking, horseback riding, motor touring, berrypicking, firewood gathering, cross-country skiing, and use of the wilderness system.

b. Developed Recreation

Developed National Forest sites received approximately 237,000 recreation visitor days in FY 1983. This is about 15 percent of the Forest's total recreation use. These sites have a capacity to accommodate about 6,541 people at one time. Nearly half receive more than 40 percent of their theoretical potential use each year. (Forty percent of theoretical use is the level considered to be "full" use and which indicates possible need for expansion.) Popular sites, such as destination campgrounds near lakes or other attractions, are full on holidays and other popular weekends. Vegetation and soils at some of these sites reflect use levels which cannot be sustained over many years without deterioration. Other developed sites, located in more remote locations receive much lighter use and costs of operation are high when assessed against actual use. Higher energy costs are affecting use patterns. Lengths of stay are increasing at destination sites, but more remote sites and bedroom type campground use levels have dropped slightly in recent years.

Use of concession-operated sites amounted to 70,900 visitor days, or 5 percent of the total recreational use on the Forest during FY 1980.

c. Recreation Trails

The Forest's trail system is the most important dispersed recreation facility. Through trail abandonment, for various reasons, the trail system has been reduced from more than 3,500 miles to less than 1,900 miles in the past 30 years. A Recreation Opportunity Guide providing information about the trails, use, experience, and hazards is available at the Supervisor's and Ranger District Offices.

2. Cultural Resources

The Lolo National Forest contains a rich and diversified number of cultural heritage sites within its boundaries. The historic and prehistoric sites that exist on the Forest are protected by the National Historic Preservation Act of 1966 and other mandates. Cultural resource inventories have located over three hundred sites, many of which are eligible for listing on the National Register of Historic Places. To date, the Forest has one National Historic Trail (Lewis and Clark Trail) and three sites listed on the National Register of Historic Places.

3. Wilderness, Roadless, and Special Areas

The Forest contains units of nationally recognized wilderness, a national recreation area, and segments of the National Trail System.

The wilderness and special areas are represented by the Welcome Creek Wilderness (28,135 acres), Rattlesnake National Recreation Area and Wilderness (25,010 acres in NRA; 29,824 acres in Wilderness), a portion of the Scapegoat Wilderness (74,192 acres), a portion of the Selway-Bitterroot Wilderness (7,557 acres), and 89 miles in the National Trail System.

While 7 percent of the Forest is wilderness, another 37 percent is roadless and undeveloped. The inventoried roadless resource includes 776,190 acres located in 36 parcels. Appendix C contains specific detailed descriptions and analysis of the characteristics and values of each roadless area.

4. Visual Quality

Visual inventory systems were used to identify the scenic quality of the Forest's landscapes and to identify visual quality objectives to be considered in management of the resources. The analysis shows that approximately 30 percent of the Forest outside of wilderness is considered to have distinctive scenic quality, and that approximately 80 percent of the Forest has a relatively natural appearance.

5. Wildlife

The Forest contains several distinct habitats that are important to different groups of wildlife species. A large portion of western Montana's elk habitat that supports an elk population of national significance is found on the Forest, but the deer and elk populations are estimated to be at 66 to 75 percent of potential. Nongame species most likely to be affected by management activities include old-growth dependent and snag-using species. At the present time, the natural population dynamics are not affected by deficiencies in habitat.

Grizzly bear, peregrine falcon habitat, and bald eagle are found on the Forest. The status of the gray wolf is unknown. Programs to promote recovery of these threatened or endangered species are in effect where suitable habitat exists and the species needs are known.

Indicator species have been identified for wildlife species groups to monitor the effects of forest management.

6. Aquatic Environment/Fisheries Habitat

Riparian areas consist of streamside and lakeside ecosystems, aquatic ecosystems, wetlands, and flood plains. Riparian areas comprise the most valuable components to watershed, wildlife, and fisheries resources. Although the riparian areas comprise a small percentage of the Forest, they receive a disproportionate share of use, especially for transportation systems, grazing, recreation, and mineral activities.

About 3,500 miles of fishing streams exist on the Forest, and there are 96 lakes that either support or could support a fishery. There are 12 species of game fish and 7 species of nongame fish. Sediment-sensitive invertebrates are designated the indicator species for the fish group as they are most sensitive to management activities.

7. Range

Grazing is not a major use on the Forest, but it is important to the ranchers and outfitters who depend on it. Often the Forest land is an integral part of a much larger grazing unit. Currently, there are 128 range allotments on the Forest. Fourteen of these are wilderness packstock allotments. Outside wilderness, 65 allotments are active and 49 are inactive. Permitted livestock numbers have decreased over the last several years in consideration of other resource needs and reevaluation of carrying capacities.

8. Timber

From 1975 through 1979 the average annual volume of timber sold from the Forest was 98.5 million board feet (MMBF). In addition to timber programmed for sale, about 20 to 28 MMBF of firewood and other dead and down materials are removed from the Forest annually.

The Forest supplies timber to several large- and small-capacity mills in western Montana. Several speciality product mills such as post and pole yards and cedar mills are supplied by Forest timber. Firewood, pulp, and hog fuel products are also removed for use in local mills and business.

Commercially important tree species on the Forest include ponderosa pine, Douglas-fir, lodgepole pine, western larch, Engelmann spruce, grand fir, subalpine fir, and western red cedar. Productivity of the Forest's commercial forest lands ranges from 20 cubic feet per acre per year in warm, dry, pine-bunchgrass types to 164 cubic feet per acre per year in warm, moist, western hemlock types.

9. Water and Soils

Nearly half of the 42 inches of average annual precipitation that falls on the Forest's watersheds is released as streamflow. About 3.5 million acre-feet of water per year flow through almost 10,000 miles of stream channels to the Clark Fork River. The chemical water quality of streams on the Forest is generally excellent. The water quality contaminant most associated with land management is sediment. Compared to chemical parameters, sediment is naturally highly variable, both within a given watershed and between watersheds. Two soil types on the Forest are particularly susceptible to water-related erosion and sedimentation--the decomposed granitics and the lakebed sediments of Glacial Lake Missoula.

Road construction, grazing, and placer mining have impacted some of the Forest's water resources.

10. Minerals

Current mineral-related activity within the Forest is associated with the search for energy (leasable) minerals and hard rock or placer (locatable) minerals. As of September 1985, 920,000 acres of the Lolo Forest lands were under lease. Applications are pending on an additional 290,000 acres.

Locatable mineral activity is governed by the 1872 Mining Law. It allows any citizen the right to enter open public land to prospect for, locate, and develop the mineral resources therein. This right is not, however, without limits. Under the provisions of the Forest Service Surface Management Regulations (36 CFR 228), the mining claimant must present a plan of operation outlining what exploration or development steps are anticipated.

11. Human and Community Development

Human and community development activities include programs that assist people and communities while enhancing Forest management. Allocation and scheduling of outputs in any of the alternatives will not directly affect these programs, including their budgets.

Programs encouraging hiring of women, minorities, and persons with low incomes are supported. Several Older Americans are employed in the District and Supervisor's Offices under a special program. Emphasis on service expands opportunities for all persons, including the elderly and handicapped, to use the Forest.

The Forest co-sponsors annual environmental education workshops offered for graduate credit through the University of Montana for teachers.

12. Lands

Over 500,000 acres of private and State lands occur within the Forest boundary. During the past 2 decades, the Forest's land management emphasis has responded to a series of social and economic changes including accelerated subdivision, demand for services such as power and communications facilities, stronger cooperative actions with large landowners, expansion of communities in the Forest area, management of Forest areas through legislated designation, and development of the Forest.

Lands activities include the processing and managing of special uses, where non-Forest Service parties obtain certain privileges to use National Forest System lands. Currently there are 571 permits on the Forest for uses such as ditches, dams, roads, recreational occupancy, utilities, ski areas, resorts, etc. Rights-of-way across other ownerships are also acquired by the Forest to gain public access to Federal lands. Cost share agreements with other land managers provide for sharing of road development costs on intermingled ownerships and benefit all parties. Boundary location surveys/remonumentation and ownership adjustments to effect efficiency in management are also ongoing programs.

13. Roads

About 5,440 miles of inventoried system roads, which are considered necessary for resource management activities, exist on or adjacent to the Forest. Of the 5,440 miles, about 420 miles are classed as Forest arterials, 3,000 miles as Forest collectors, and about 2,020 miles as local roads. Besides these inventoried road miles, about 1,800 miles of old logging spur-type roadways exist. These roads were built originally as "temporary" facilities, but half (about 900) miles appear to have some value for future resource access and utilization needs.

14. Protection

Wildfires and insect epidemics have played a major role in the development and present conditions of the Forest. They will continue their influential role in the future.

Historically, fire has been a frequent occurrence on the Forest; all major vegetative types evolved with lightning and man-caused fires. Cyclic fires played a variety of roles including seedbed preparation, nutrient cycling, maintaining seral vegetation, providing favorable habitat for some wildlife species, maintaining a mosaic of age classes and vegetative types, reducing susceptibility of vegetation to some types of insect and disease attacks, and reducing heavy, continuous fuel loads.

A significant timber loss is occurring in some drainages on the Forest from epidemic infestations of the mountain pine beetle and associated mortality of lodgepole pine. Forest-wide, it is the most serious insect pest. The most serious outbreak is found on the Plains/Thompson Falls Ranger District. Of 13,800 acres of infested lodgepole pine observed on the Forest in 1980, 12,600 acres are on this Ranger District.

15. Air Quality

The Clean Air Act established wildernesses as Class I air quality areas. Protection of air quality will be a critical factor in the management programs for the Forest's wildernesses.

The frequent temperature inversions in the Missoula Valley have led to a cooperative effort between local, County, State, and Federal agencies to limit burning to protect and improve air quality.

IV. ENVIRONMENTAL CONSEQUENCES

Different mixes of prescriptions by alternative produce different levels of resource outputs, goods, and services, such as recreation capacity, habitat diversity, timber production, water yield, and grazing use. The level of output and the location where it is produced translate into varying environmental consequences by alternative.

Each management area includes standards and practices that provide mitigation measures to ensure that long-term productivity of the land is not impaired. Forest-wide standards that apply to all prescriptions also protect the resources and mitigate adverse impacts. Therefore, the alternatives considered in detail all meet the minimum requirements for the conscientious management of the resources.

Wilderness. The Proposed Action would increase the amount of wilderness over the Current Direction (Alternative a), but fall short of proposing the total suitable acreage for classification. Wilderness classification provides for certain recreation, scientific, and educational opportunities, and provides satisfaction to the public in that these lands are designated for preservation and protection in their natural state. Wilderness classification can reduce the PNV and contribution to local economy because of reduced availability of forest products and lower Forest receipts.

Range. The small difference between continuation of the current situation and the highest potential for grazing indicates there is little room for increasing the levels of grazing use on the Forest under any alternative. Livestock grazing at the levels projected will have a minimal effect on the environment.

Recreation. All alternatives are capable of supplying more dispersed recreation opportunities than the foreseeable demand. The mix of dispersed recreation types between alternatives varies with the amount of road development required to accomplish other goals of each alternative. Developed recreation facilities are similar in all alternatives in that they do not provide for new campground or picnic area construction since the existing supply is adequate to meet demand.

Timber. The Proposed Action increases the timber harvest level offered from the existing management situation and Current Direction (Alternative a), but shows a decrease from the situation where conditions are most suitable for high timber production (Alternative c). Subtle and gradual changes will occur in most watersheds resulting in generally younger, more healthy, and diverse stands with a greater variety of age classes. There will be some short-term losses in foreground visual quality resulting from openings required to renew aging and uniform stands.

Water and Soils. High impact potential results from roading and other development projects, grazing, and harvesting timber in the riparian zone. The direct effects are removal of protective cover, changes to many habitats that wildlife depend on, and the potential to affect the stability of landforms and stream channels.

Increasing the miles of road construction, especially in riparian zones, increasing timber harvests, and increasing road maintenance on roads open for public use, increases the potential for water quality (sediment production) impacts.

Wildlife. Habitat effectiveness or freedom of wildlife from human disturbance is important if benefits from improved habitat diversity are to be realized. Both diversity (e.g., proper ratios of food and cover, access to water, protection of wallows and salt licks) and effectiveness (lack of disturbance) are necessary to improve big-game habitat.

Human and Community Development. Existing equal opportunity emphasis on the Forest strongly considers minorities, women, and the handicapped in hiring practices and the enforcement of contracts and permits. This emphasis would apply to any alternative; however, some alternatives inherently reduce the flexibility to achieve equal opportunity goals, such as those that suppress service concepts.

Summary of Short-Term Use and Long-Term Productivity. Alternative c has the highest levels of short-term uses, as reflected by acres of vegetative treatment, and therefore results in higher levels of short-term consequences, such as reduced air quality, visual impacts, fire hazard, and increased sedimentation. Alternative g has the lowest level of short-term uses, and therefore the lowest level of short-term consequences. In all alternatives, the long-term productivity is maintained or improved.

Summary of Irreversible and Irretrievable Commitment of Resources. The construction of roads to provide future access to the Forest is considered an irreversible action because of the long time needed to revert a road to natural conditions. Mineral and mineral-material extraction is also an irreversible action. Alternative c, with the highest resource output levels, has the greatest irreversible commitment of resources based on associated construction of roads. Alternative g has the fewest irreversible actions and protects future options the most.

Irretrievable commitment of resources is the lost use of a resource due to land assignment decisions. This may be the loss of timber utilization due to a wilderness assignment, or the loss of a natural environment due to a timber management assignment. The maintenance of future options and the current ability to utilize the resources to the fullest tend to conflict with one another, and the purpose of Forest planning is to balance the needs of both the current population and future generations.

Implementation of the Proposed Action or the alternatives will result in some adverse environmental consequences that cannot be avoided even though the mitigation measures included in the management standards serve to limit the extent and duration of these effects. These effects include:

-- increases in sedimentation resulting from soil disturbance and increased water yield.

-- short-term adverse effects on scenic quality because of vegetation management and road construction.

-- foregone timber volumes because of the inaccessibility and inoperability of certain landforms, and the unavailability of forest products in classified wilderness.

-- reduced air quality because of dust, smoke, and automobile emissions resulting from increased recreation use and vegetative management practices.

-- some loss of primitive and semiprimitive recreation opportunities occurs on lands intensively managed for timber production.

CHAPTER I - PURPOSE AND NEED FOR ACTION

A. Introduction

This Final Environmental Impact Statement (FEIS) describes a proposed action, and alternatives to the proposed action, for the future management of the land and resources of the Lolo National Forest. The FEIS also describes the affected environment and discloses the environmental consequences of implementing the proposed action and alternatives to it. This Final Environmental Impact Statement has been prepared in response to public and agency comments on the Revised Draft Environmental Impact Statement, filed February 22, 1985.

The Proposed Action identified in this Final Environmental Impact Statement serves as the basis for the National Forest Land and Resource Management Plan (Forest Plan) which is described in a separate document.

This EIS and the Forest Plan are designed to ensure multiple use and provide a long-term sustained yield of goods and services from the Forest to maximize long-term net public benefits (NPB) and address public issues in an environmentally sound manner. NPB represents the cumulative net value of all Forest outputs and activities.

The goal in developing the Forest Plan is to fully integrate a mix of management actions that provide for use and protection of forest resources, satisfy guiding legislation, and address local, regional, and national issues. The Forest Plan will guide management of the Forest for the next 10 to 15 years unless conditions or demands significantly change. The analysis in the EIS projects outputs and effects for up to 120 years to indicate the long-term implications of continuing with the Plan. While long range effects have been estimated, the Plan is only valid until is is revised, committing the Forest to a course of action no longer than 15 years. Provision for revision or amendment of the Plan is specified in 36 CFR 219.10(q).

Preparation of the Forest Plan is required by the Forest and Rangeland Renewable Resources Planning Act (RPA), as amended by the National Forest Management Act (NFMA). The preparation of an Environmental Impact Statement disclosing a proposed action and alternatives to it is required by the National Environmental Policy Act, 42 USC 4332 (NEPA); the Council on Environmental Quality (CEQ) NEPA Regulations (40 CFR 1500-1508); and the implementing regulations of NFMA (36 CFR 219). This FEIS is prepared in the format established in the CEQ Regulations (40 CFR 1502.10).

Projects implementing the Forest Plan are subject to the NEPA process. However, environmental effects can be tiered from the broader environmental statements of the RPA program, Regional Guide, and Forest Plan. Actions not covered by the hierarchy of planning levels will require additional environmental analysis.

B. National, Regional, and Forest Planning

The planning process involves the three Forest Service administrative levels: National, Regional, and Forest. Management is based principally upon locally derived information about production capabilities; reflects conditions and circumstances at all levels; and becomes increasingly specific as planning progresses from the National to the Forest level. Regional Guides convey management direction from the National level to the Forest, and convey information from the Forest to the National level. Regional Guides also establish management standards and guidelines, identify Regional issues, and distribute RPA targets to Forests. The question of meeting the targets assigned the Forest is addressed in the Forest planning process.

The Forest Plan replaces all previous resource management plans prepared for the Forest. After approval of a Forest Plan, all permits, contracts, and other instruments for the use and occupancy of the National Forest System land will be revised as soon as practical to be made consistent with the Forest Plan (16 USC 1604 (i)). In addition, all subsequent administrative activities affecting the Forest, including budget proposals, will be based on the Forest Plan (36 CFR 219.11 (d)).

The planning process, as specified in the National Forest Management Act Regulations (36 CFR 219), was followed in development of the Proposed Action. The regulations require an interdisciplinary team to insure coordinated planning which addresses recreation, range, timber, watershed, wildlife, and fish, and wilderness opportunities (36 CFR 219.5). Also required is early and frequent contact with the Forest's publics and coordination of planning efforts with other Federal agencies, State and local governments, and Indian tribes. The thrust for the planning effort is provided by the publics' concerns about the way the Forest is managed. This approach to planning identifies problem areas and sets courses of action to resolve those problems; it recognizes the interrelationships of physical, biological, social, economic, and other environmental factors; it considers the effects of managing any combination of resources on all other resources; it weighs resource and dollar costs relative to goods, services, and uses provided. A data base of information was compiled by the interdisciplinary team from available resource information and public participation.

The planning actions as described in the Regulations (36 CFR 219.12(b)-(k)) and used in this Forest planning process are:

1. Identification of purpose and need
2. Development of planning criteria
3. Inventory of data and information collection
4. Analysis of the management situation
5. Formulation of alternatives
6. Estimated effects of alternatives
7. Evaluation of alternatives
8. Preferred alternative recommendations
9. Plan approval
10. Monitoring and evaluation

The Draft EIS was prepared and circulated for comment after completion of planning actions 1 through 7. The public and Governmental agencies were asked to comment. Comments received were used to examine the results of the first seven planning steps and to modify the Forest Plan. The Final EIS and Forest Plan were then prepared and are used by the Regional Forester as the information base for a Record of Decision to complete the planning steps.

C. Planning Area (See Vicinity Map - Figure I-1)

The Lolo National Forest is located in western Montana and includes 2,112,597 acres of National Forest System lands. Roughly 120 miles long and between 40 and 80 miles wide, the Forest lies between 46° 30' and 48° north latitude and 112° 30' and 116° west longitude. The distribution of acreage by county is as follows:

County	Acres
Flathead	18,707
Granite	217,623
Lake	39
Lewis & Clark	74,332
Mineral	647,207
Missoula	498,830
Powell	144,688
Ravalli	5,687
Sanders	484,837

Missoula County is the most densely populated of the counties, and the city of Missoula serves as a trade center for western Montana cities. Other population centers in the vicinity of the Forest are much smaller than the city of Missoula. Total population for the nine county area is approximately 234,578.

The Supervisor's Office is located in Missoula with Ranger District Offices located in Missoula, Ninemile, Plains, Seeley Lake, and Superior, as shown on the vicinity map. A portion of the Lolo Forest along the southeast edge is administered by the Deerlodge National Forest (29,405 acres) because it is an integral part of large grazing allotments on the Deerlodge Forest, and because of its transportation isolation from adjacent Lolo Forest lands. Planning for this portion of the Lolo National Forest will be accomplished by the Deerlodge Forest Supervisor, as provided under 36 CFR 219.4(b) (3).

Four wilderness areas have been classified on the Forest (private land included): Welcome Creek (28,135 acres); Rattlesnake (33,000 acres); Selway-Bitterroot (9767 acres); and Scapegoat (74,832 acres).

The 36 inventoried roadless areas on the Lolo National Forest include approximately 776,190 acres of National Forest System land. Eight of the roadless areas overlap onto other Forests and were evaluated for wilderness designation in their entirety. These shared areas (acres listed are for the Lolo National Forest portion) are: Maple Peak (6,960 acres), Stevens Peak (600 acres), and Wonderful Peak (1,600 acres) - Idaho Panhandle National Forests; Hoodoo (98,500 acres) and Meadow Creek/Upper North (7,200 acres) - Clearwater National Forest; Silver/King (12,840 acres) - Deerlodge National Forest; Cataract (9,900 acres) - Kootenai National Forest; and Bear-Marshall-Scapegoat-Swan (120,900) - Flathead National Forest. Refer to Appendix C for a detailed description of all roadless areas.

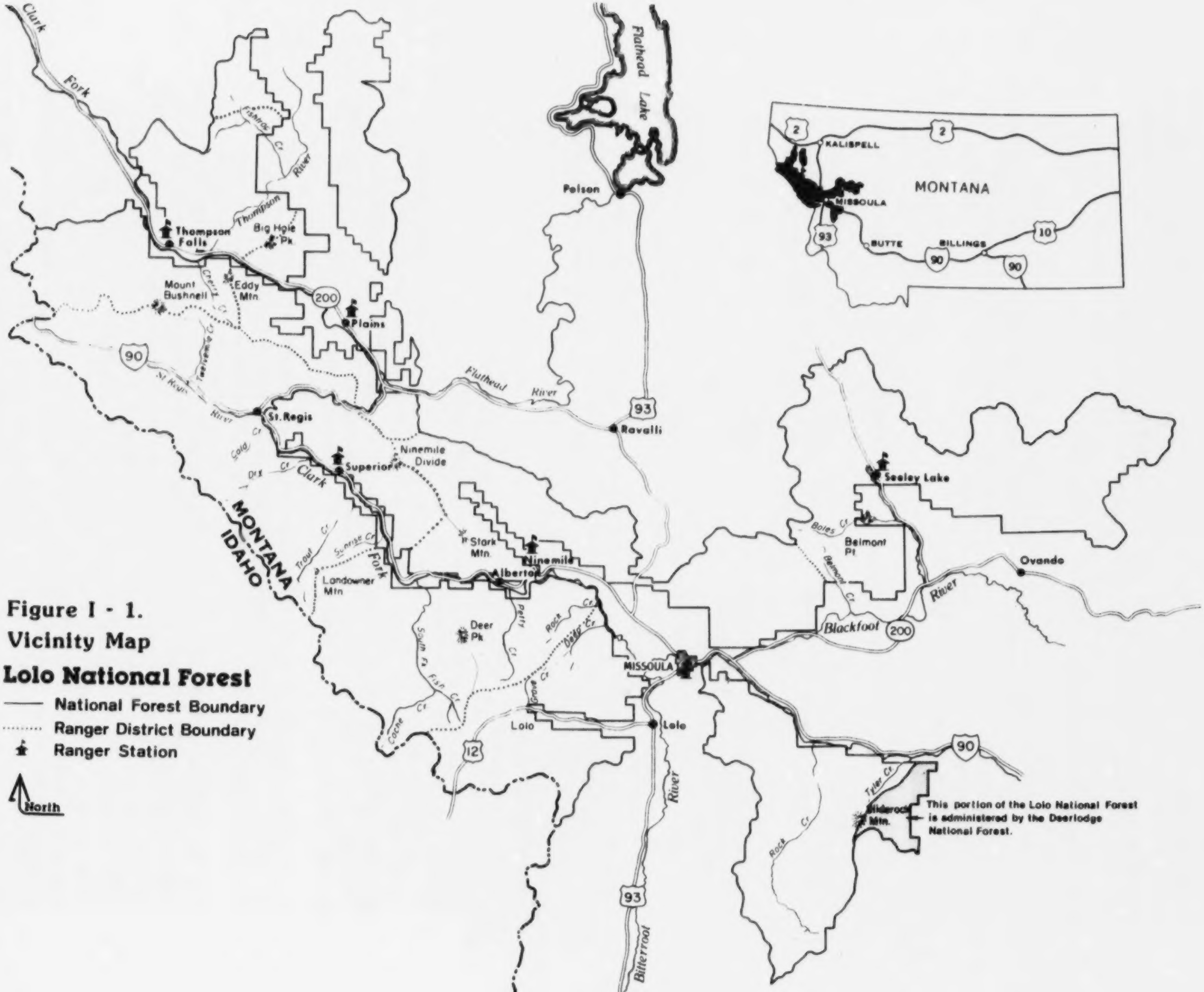

Figure I - 1.
Vicinity Map
Lolo National Forest

National Forest Boundary
Ranger District Boundary
Ranger Station
North
MONTANA
KALISPELL
MISSOULA
BUTTE
BILLINGS
2
93
90
10
Clark Fork
Flathead Lake
Polson
Thompson Falls
Fishtrap Cr
Thompson River
Big Hole Pk
Eddy Mtn
Mount Bushnell
Cherry Cr
200
Plains
90
Twelvemile Cr
St Regis River
St. Regis
Flathead River
93
Ravalli
Ninemile Divide
Cold Cr
Dry Cr
Clark Fork
Superior
Stark Mtn
Ninemile
Alberton
MONTANA
IDAHO
Trout Cr
Sunrise Cr
Landowner Mtn
Deer Pk
South Fk Fish Cr
Petty Cr
Rock Cr
Deer Cr
Grave Cr
Cache Cr
Lolo
12
MISSOULA
Lolo
Bitterroot River
93
Seeley Lake
Boles Cr
Belmont Pt
Belmont Cr
Blackfoot River
200
Ovando
90
Tyler Cr
Rock Cr
Sliderock Mtn
This portion of the Lolo National Forest is administered by the Deerlodge National Forest.

D. Issues, Concerns, and Opportunities

The interdisciplinary team began its identification of public issues by reviewing public comments on the following types of documents: completed Forest Unit Plan Environmental Impact Statements; the Forest Travel Plan; Forest resource plans; completed Unit Plans and Travel Plans for adjacent National Forests; recent environmental impact statements prepared by the Bureau of Land Management and the Bonneville Power Administration; and recent appeals on management proposals in the Forest Service's Northern Region.

In a parallel effort, Supervisor's Office and District resource personnel identified tentative management concerns in their fields or areas of specialty. Review and screening of public comments and initial management concerns resulted in a "Tentative Public Issues" package containing 19 broad issue statements. That package was sent to about 750 individuals and organizations on the Forest mailing list for comment in May, 1978. During the 30-day response period, members of the public had the opportunity to attend workshops held in Ranger District locales. Of those contacted, about 20 percent responded. Based on comments from the public, the initial list of issues was expanded from 19 to 31. The final issues were mailed to the public, as well as a summary of workshop attendance and public comments, with a statement on how the interdisciplinary team used their comments to finalize the issues.

Since the original issues were finalized, the Regional Forester has approved four new issues, they are: a management concern related to oil and gas leasing was reclassified to a public issue; recognition of a new issue that addresses management of the Rock Creek drainage; and two issues concerning wilderness and roadless evaluation on the Forest. To address the latter two issues on wilderness and roadless, additional public involvement was initiated in September 1983. Prior to this, Forest planning efforts had examined a broad range of uses for roadless areas but had not included an evaluation for wilderness suitability. The Forest relied on earlier evaluations and recommendations made in the RARE II (Roadless Area Review and Evaluation) Final Environmental Impact Statement. As a result of the revised NFMA Regulations, September 1983, (36 CFR 219.17), the Forest Service is including an evaluation of roadless areas for wilderness in the Forest planning process.

Upon finalizing the issues, the interdisciplinary team compiled a list of those management concerns that could not be combined into broad issue statements. The list was submitted to the Forest Supervisor who indicated his priorities for management concerns to be addressed in the planning process. Upon Regional Forester's staff approval, a final list of management concerns was also prepared. Appendix A provides an expanded discussion the public involvement process and the identification of issues, concerns, and opportunities.

The Revised Draft EIS and proposed Forest Plan were released on February 22, 1985 for public review and comment. The comment period closed on June 1, 1985. The Final EIS and Forest Plan respond to public comment. Chapter VI documents the consultation and responses to comments from the public; Federal, State, and local Governement agencies; industry; organizations; and elected officials. Chapter VI includes copies of the written comments received during the comment period.

Public issues and management concerns are displayed below, as well as a summary of the public comment received on the 1985 Revised Draft EIS and proposed Forest Plan. Chapter VI provides more detail on the public comment.

RANGE

An estimated 194,000 acres of the Lolo National Forest has been considered suitable for domestic livestock grazing the past 10 years. Most of this range is forested, with less than five percent classified as permanent range. The majority of the rangelands are best suited for summer use. Though it is not a major forest activity, grazing use of the Forest by livestock does furnish part-time livelihood to permittees, a majority of whom have small (less than 100 head) permits. Other forage users include wildlife and recreation pack and saddle stock.

Public issues and management concerns related to the range resource attempt to define a larger overall issue dealing with the compatibility of livestock grazing on the Forest with other resource programs. This situation is complicated by the social/economic implications associated with part-time livestock operators who sometimes cannot afford to pay for range improvements necessary to protect other resources such as riparian areas within allotment boundaries. In addition, the Forest must consider how it will address noxious weed control, a problem that is becoming major in western Montana on private and public lands.

In order to resolve the following issues and management concerns, the Forest identified suitable rangeland on the Forest; determined amounts of forage that could be produced; identified forage users; analyzed costs and benefits in relationship to other resources; developed criteria for determining appropriate users on specific pieces of ground; and developed standards for future management of grazing allotments.

Range Issue No. 1. Where and how much livestock grazing can occur on the Forest and be compatible with water quality, fisheries, timber management, soils, vegetation, and recreation?

Range Issue No. 2. When conflicts arise between livestock grazing and wildlife habitat, where should emphasis be placed?

Range Issue No. 3. What are the social and economic aspects of livestock grazing on the Lolo National Forest?

Range Management Concern No. 1. What investments should the Forest make to maintain grazing capacity and minimize conflicts with other uses?

Range Management Concern No. 2. How will land uses outside the Lolo National Forest be affected by increased or decreased livestock grazing on the Forest?

Range Management Concern No. 3. To what extent will the Forest consider the use of herbicides to accomplish noxious weed control?

Public comments responding to the Revised Draft EIS were concerned with range improvements where necessary to manage riparian areas, improve water quality, minimize erosion, improve fisheries and wildlife habitat, and provide for healthy stands of timber within allotments. Some commenters also addressed the need for monitoring in allotments and within precribed burns on range areas. Several commenters felt that the presence of expansion of noxious weeds, particularly knapweed, was a threatening situation for livestock producers. It was also requested that the Lolo display a range of alternatives addressing "range".

RECREATION

An estimated 12 million recreation visitor days were spent on the Lolo in 1983. About 237,000 visitor days were spent on the Forest's developed recreation sites (campgrounds, picnic grounds, ski areas). The remaining visitor day activities were dispersed recreation (hiking, backpacking, canoeing, cross-country skiing, hunting, fishing, horseback riding, boating, snowmobiling, bike riding, driving for pleasure, berry picking, etc.). A variety of recreation attractions occur on the Forest, and there are opportunities to provide recreational experiences to suit all tastes.

Public issues and management concerns related to recreation reflect the importance of developed and dispersed recreation as a principal resource on the Lolo Forest. The varied and diverse publics, both local and national, that visit the Forest, display a range of needs based on their interests, values, ages, and physical conditions. The issues and management concerns listed attempt to put recreation needs on the Forest in perspective by examining the appropriate balance of recreation uses with other resources and funding, the need for variety of recreation opportunities, and the importance of quality recreation experiences to users.

In order to resolve the following issues and management concerns, the Forest identified developed and dispersed recreation sites and opportunities; looked at ways to provide access for recreation; examined the Forest's role in and developed criteria for providing for a variety of recreational experiences; and analyzed the types of recreation visitor that uses the Lolo Forest.

Recreation Issue No. 1. How much roadless, nonwilderness recreation opportunity should the Forest provide and where should it be located?

Recreation Issue No. 2. Where and what kinds of access are needed to provide for Forest users' recreation needs?

Recreation Issue No. 3. What kinds of access and facilities (trails, toilets, plowed parking lots, unloading ramps, etc.), should be provided to meet the Forest's dispersed recreation needs?

Recreation Issue No. 4. What is the Forest's role in meeting demands for developed recreation (campgrounds, picnic grounds, ski areas, marinas, etc.) and where should developed sites generally be located?

Recreation Issue No. 5. How much land area should the Forest provide for off-road vehicle use and where should it be located?

Recreation Issue No. 6. How should recreation in the Rattlesnake drainage be managed?

Recreation Issue No. 7. How can the Forest provide opportunities for people to enjoy fish and wildlife species, quality hunting and fishing, seeing and hearing animals of various kinds?

Recreation Management Concern No. 1. Recreation opportunities need to be broader and consider the physically handicapped, elderly, and a range of opportunities and levels of challenge for Forest users.

Recreation Management Concern No. 2. There is a need for more coordinated planning for metropolitan area recreation; e.g., areas of high use in the Missoula area.

Public responses commenting on the Revised Draft EIS addressed the need for a variety of quality recreation experiences. Some commenters were concerned that future road building and accelerated timber harvest in some areas would impact hunting recreation experiences. Willingness-to-pay values in recreation were questioned, as some commenters felt that those displayed in the RDEIS were too low. One commenter requested that the Forest display a range of recreation options addressing quality, availability, and opportunites between alternatives, regardless of the supply/demand situation. Several responses contained requests that the Forest include the Rock Creek agreement in the Forest Plan to insure protection of the special resources in that area, including recreation opportunities. One commenter felt that treatment of the Continental Divide National Scenic Trail in the RDEIS was inadequate. A commenter felt that the Forest did not adequately take into account the importance of National Forest recreation to the tourism industry in Montana.

TIMBER

Timber is one of western Montana's most important natural resources, providing the backbone for the area's major industry. During the past 10 years, the Lolo has offered an average of 100 million board feet of a variety of timber species. That volume contributes to the manufacture of wood products, while residue from timber management activities provide firewood for local residents.

Public issues and management concerns related to the timber resource reflect an overall desire to manage timber to help sustain productivity, assist dependent industries, increase utilization, and be cost effective in balance with other resources on the Forest. Individual issues attempt to determine an appropriate timber supply with stability in annual harvest programs; sustained yield within the capability of the land; consideration of local needs in analyzing the Lolo Forest's contribution to the national timber supply; and what lands fall within the timber base.

In order to resolve the following issues and management concerns, the Lolo Forest inventoried its forested lands; determined sites capable of growing timber; analyzed costs and benefits in relationship to other resources and economics in general; developed criteria for timber harvest activites; projected the Forest's sustained yield over the planning horizon; and determined appropriate tools to be used in the timber management program.

Timber Issue No. 1. What level of sustained annual yield of timber products should the Lolo provide that will maintain Forest productivity and still meet local, regional, and national needs?

Timber Issue No. 2. Where and to what degree of intensity can timber management be applied to ensure that the best sites are managed to meet future needs?

Timber Issue No. 3. In what ways can the Forest achieve better utilization of wood products?

Timber Issue No. 4. To what extent will economics be a factor in determining sale feasibility?

Timber Management Concern No. 1. There is a need to improve timber utilization in order to increase yields, reduce fuels, and lower management costs.

Timber Management Concern No. 2. There is a need for investment guides for marginal sites on the Forest.

Timber Management Concern No. 3. To what extent will the Forest consider the use of herbicides to accomplish roadside maintenance and various silvicultural objectives.

Timber Management Concern No. 4. The Forest needs to establish criteria for the use of timber harvest systems.

Timber Management Concern No. 5. There is a need to develop a means of integrating all resource goals when preparing reforestation plans, especially for backlog areas.

Many public comments on the Revised Draft EIS suggested that the Lolo should provide for the needs of the local timber industry by displaying a return to a "historic" cut level of approximately 160 million board feet per year. Those comments were based principally on the acknowledgment that private lands will be depleted in this decade and the Forest should have the flexibility to increase the timber supply from the National Forest. Several commenters also stated that the Forest should make available timber volumes to supply the capacity of local mills. Some responses suggested that the Forest Service has a responsibility to assist local industry because mills were established and expanded in western Montana at the encouragement of the agency.

Other responses indicated that the Lolo Forest should initially make available an amount of timber that more closely matches the level of harvest on the Forest during the last few years; they requested that the Plan have the flexibility to expand timber volumes offered to meet potential increases.

A commenter questioned including remote areas in the timber base because it may not be economically reasonable to harvest timber there. Another commenter requested that the Forest remove areas with granitic and other erodable soils from the timber base.

WATER AND SOILS

Nearly 3.5 million acre-feet of water from the Forest's watersheds provide recreation, fisheries habitat, agricultural and domestic supplies, and contribute to the Northwest's hydroelectric power network. Many communities obtain a major portion of their water from the Lolo's watersheds. Water on the Lolo is generally of excellent quality.

While the great majority of the soils on the Forest are stable, the remainder (less than 10 percent of the area) are granitics and glacial and lake sediments which are highly sensitive from a sedimentation standpoint. The potential for erosion of these soils is magnified by steep slopes and natural, as well as human-caused disturbance.

Public issues and management concerns related to the water and soils resource stem from an overall issue that attempts to insure that the Forest lands will be managed so that water quality and basic soil productivity can be maintained or improved. That goal reflects a desire for high water quality and an attempt to determine what that means in various drainages on the Lolo Forest. Concerns about potential effects of management activities on water quality are heightened by the problem of intermingled ownership within Lolo Forest boundaries and the presence of granitic soils, glacial and lake sediments, and steep slopes in areas where timber harvest may take place.

In order to resolve the following issues and management concerns, the Lolo Forest developed criteria for protecting watersheds, including those lands with intermingled ownership; identified areas with sensitive soils; developed management prescriptions to protect those areas; developed Forest-wide standards related to water quality and sensitive soils; started a process to deal with water rights; and established monitoring requirements to evaluate protective measures.

Water and Soils Issue No. 1. How can the Forest maintain watershed protection on lands with intermingled ownership?

Water and Soils Issue No. 2. Considering that water quality is an indicator of how the land responds to management, what level of water quality should the Forest strive to maintain in various drainages?

Water and Soils Issue No. 3. To what extent should areas on the Forest such as steep slopes, granitic soils, and glacial and lake sediments be developed?

Water and Soils Management Concern No. 1. There is a need for a basic policy statement on water quality standards. This statement will provide an opportunity to explain to what extent water quality is an indicator of proper management, to explain State and Federal water standards to the public, and to identify areas on the Forest that need special treatment to either maintain or improve water quality.

Water and Soils Management Concern No. 2. There is a need to identify streams of high value for recreation and fisheries where water rights need to be established and quantification determined.

Water and Soils Management Concern No. 3. There is a need to consider basic soil productivity, especially relevant to activities that cause compaction.

Public comments on the Revised Draft EIS reflected a strong desire to protect water quality on the Lolo Forest and a fear that management activities might impact the high quality of water existing in certain drainages on the Forest. Some commenters requested that the Forest Plan contain a basic policy statement on water quality. Several responses cited the need for stong management commitment to do the monitoring called for in the Forest Plan as a way to insure water quality. Some responses asked that the Forest state when, where, and how sediment data will be collected to calibrate and use yield models on the Lolo Forest. One commenter suggested that areas of the Forest with granitics and other equally erosive soils be removed from the timber base.

WILDLIFE

The Lolo National Forest is home to about 425 species of wildlife including: 10 big-game species; 27 commonly occurring small-game and waterfowl species; about 300 species of birds; the endangered peregrine falcon, bald eagle, and gray wolf; and the threatened grizzly bear. Big-game hunters spend approximately 211,000 hunter days on the Lolo annually.

Public issues and management concerns related to the wildlife resource reflect an overall desire to provide for diversity and protection of wildlife, provide for threatened and endangered species, and to provide for habitat management in a way that takes advantage of other management activities on the Forest. Individual issues and management concerns attempt to sort out wildlife needs for different species, reflecting concern for big game, recovery of threatened or endangered animals such as the grizzly bear, and non-game animals and birds such as old-growth dependent species. These issues and concerns are further defined by concerns about the effects of human activities on wildlife and what mitigation measures might decrease those impacts.

In order to resolve the following issues and management concerns, the Lolo Forest identified areas of the Forest that are important for big-game habitat needs; determined the amount of habitat that will support big-game

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Public issues and management concerns related to the aquatic/fisheries resource reflect an overall concern about what fish habitat needs to be improved on the Forest, and how should the riparian areas be managed in general. A desire to protect streambanks and riparian zones and maintain the excellent fish habitat on the Forest, particularly in drainages such as the Rock Creek blue ribbon trout stream, support the issues and management concerns listed.

In order to resolve the following issues and management concerns, the Lolo Forest determined descriptors and criteria for identifying riparian zones; identified specific riparian zones on the ground; developed management areas and prescriptions to mitigate conflicts with other resources; and measured and analyzed costs and benefits.

Aquatic/Fisheries Issue No. 1. Where and how much aquatic environment/ fisheries habitat on the Forest should be improved?

Aquatic/Fisheries Issue No. 2. How can the Forest continue to protect the fisheries, wildlife, and recreation values in the Rock Creek blue ribbon trout stream? (This had been an issue in the past but was not addressed in the original DEIS because the public did not identify it at that time. However, because of recent project planning in the drainage and the Bonneville Power Administration 500-kv powerline, it is addressed as a public issue.)

Aquatic/Fisheries Management Concern No. 1. The Forest needs specific objectives for riparian zone management because of high resource values and conflicting uses.

Public comments received on the Revised Draft EIS included several responses asking that budget priorities be adjusted to accommodate data collection and model calibration necessary to adequately do the monitoring items listed in this resource area. A commenter felt that it is not clear how the Forest intends to maintain or improve fish habitat, what levels of funding will be available, and who will be responsible for implementation. Several commenters asked that budgets be adjusted to accommodate collection of baseline fish model data. A response contained a request that the Forest display a non-degradation policy for fisheries. Several commenters asked that the Rock Creek agreement be displayed as part of the Forest Plan. Comments also suggested that the Forest address cumulative downstream impacts and recognize that several streams on the Forest such as Lolo Creek are at or near degradation thresholds.

LANDS

The Lolo Forest administers approximately 2.1 million acres of National Forest System lands. Within the Forest boundary are approximately one-half million acres of State and private ownership, with much of the land in a "checkerboard" pattern common in the West. Landowners include the State of Montana, Champion International, Plum Creek Timber Company, Inc. and a number of private individual or corporate owners with smaller holdings.

Public issues and management concerns related to lands reflect a desire to establish policies needed to adjust landownership patterns based on multiple use objectives and efficiently administer special uses on the Forest. These issues and concerns are further defined by questions about mutual benefits in exchanges and the need to resolve problems created by conflicting objectives and uses on intermingled lands. A philosophical question about the use of land exchange to provide for block ownership versus the public interest complicates the situation.

In order to resolve the following issues and management concerns, the Lolo Forest developed criteria and identified areas where mixed landownership is considered a problem for management; determined where acquisition of certain properties would facilitate different resource management objectives; established criteria for prioritizing lands to be acquired; identified possible corridor routes through the Forest; and established criteria to estimate resource, social, and economic impacts of major utility corridors.

Lands Issue No. 1. In order to improve National Forest management, which lands should the Forest identify for acquisition or disposal through purchase or exchange?

Lands Issue No. 2. In the event that power lines or pipe lines must be located on the Forest, where would they be least likely to impact resource values and uses?

Land Management Concern No. 1. The Forest needs guidelines on the issuance and administration of special use permits.

Public comments received on the Revised Draft EIS indicated a corporate concern about the Forest's position on management efficiency related to land adjustment. A commenter requested that the acquisition of key wildlife habitat in public ownership should be a high priority in the land adjustment plan. One commenter felt that energy transmission corridors should be evaluated between alternatives and displayed on alternative maps; in addition, they felt that the plan should designate rights-of-ways, discuss site management, and address the potential for energy resources development.

MINERALS

The western part of the Lolo is mineralized, being directly associated with the Osborne Fault and several smaller fault systems. There are several operating mines on the Forest, and exploration work is increasing. A number of oil and gas leases have been filed, but no drilling has started. Common variety minerals (gravel, riprap, building stone) are heavily mined in some parts of the Forest.

Public issues and management concerns related to the mineral resource on the Lolo reflect a desire to determine where on the Forest locatable and leasable minerals should influence land assignment and management direction. Concerns about the impacts of mineral extraction and access for mineral exploration further define the issue.

In order to resolve the following issues and management concerns, the Lolo Forest identified areas with high mineral potential; analyzed the costs and benefits of accessing those minerals in relationship to socio-political and resource considerations in those areas; developed prescriptions to accommodate mineral activity in various management areas; developed an assessment of alternative strategies for leasing on the Forest to include an analysis of potential environmental and social impacts; developed appropriate stipulations for various management areas to protect other resource values.

Minerals Issue No. 1. Where on the Lolo National Forest are there areas of mineral potential high enough to influence land assignment?

Minerals Issue No. 2. Where on the Forest should the Forest Supervisor recommend approval of oil and gas lease applications, and with what types of restrictions? (This had been identified as a management concern, but because of the growth in interest shown for oil and gas leasing over the past year, the topic has become a public issue.)

Public comments received on the Revised Draft EIS indicated that some members of the public felt that minerals did not receive adequate treatment in the analysis or the Forest Plan. It was suggested that minerals should affect land assignments in areas of mineral potential. Some commenters felt that wilderness designations "locked up" valuable national mineral resources.

FIRE

Fire has been a significant factor in shaping and maintaining the kinds of plant communities that occur on the Lolo. Because of this, prescribed burning is a traditional technique used to achieve a variety of resource management objectives including slash disposal after logging, site preparation for reforestation, and improving yield and quality of forage for livestock and wildlife. The number of burning days available to achieve these objectives is limited by weather conditions, smoke management guidelines, and air quality standards. In addition, wildland fires are being allowed to play a more nearly natural role in wildernesses.

Public issues and management concerns related to fire reflect an overall issue concerning the degree to which fire management and suppression should be used to achieve resource management objectives and be cost effective. Individual issues and management concerns further define the situation by attempting to identify alternative means available for meeting land management objectives, reduce the backlog of fuel buildups, and identify where fire should or should not be used.

In order to resolve the following issues and management concerns, the Lolo Forest developed criteria for using fire as a management tool and determined its place in the scheduling of management activities.

Fire Issue No. 1. Where and how much fire can be used to achieve resource management objectives within air quality guidelines and standards?

Fire Management Concern No. 1. Fire use and control programs need to be compatible with the role of fire in various ecosystems.

Fire Management Concern No. 2. The Forest needs a cost effective fire suppression program responsive to the revised fire management policy.

Public comments received on the Revised Draft EIS requested that the range of annual suppression costs be checked and that the Montana Airshed Group and Cooperative Smoke Management Plan should be referenced in the Final EIS.

ROADS

There are approximately 5,440 miles of system roads on the Forest. About 420 miles of roads are classed as Forest arterial or land access roads. The remaining mileage is classed as collector or land use roads that range from the very low standard, single use, local or project-type facility to the higher standard primary collector-type road. There are an additional estimated 3,000 miles of very low standard roads subject to review for retention as system roads. The density of project or logging system roads varies with the type of logging system for which they are designed. On the average, the older jammer systems required 15 to 20 miles of road per section, while the newer long line systems require about 4 to 7 miles per section. Of all Forest management activities, road construction has the greatest potential for impacting the appearance of the Forest and the water quality.

Public issues and management concerns related to roads reflect an overall desire to establish adequate road standards and determine how much open/closed roading is needed on the Forest to accomplish a variety of resource objectives. These concerns are further defined by questions about road costs in general related to dollars back to the Treasury, engineering standards relative to road use, and development and construction of necessary roads in a cost effective manner. The situation is complicated in areas of the Forest erosive soils, marginal timber, and steep slopes. The degree to which roading and added access to the Forest impacts other resources such as wildlife is another factor to be considered in these issues and management concerns.

In order to resolve the following issues and management concerns, the Lolo Forest determined road standards necessary to support management activities in alternative management scenarios; identified criteria for road closures; developed road construction and maintenance prescriptions for management areas; and developed an economic policy that establishes a process to determine Net Public Benefits in transportation system alternatives.

Roads Issue No. 1. What standards of roads are needed to support resource management activities on the Forest?

Roads Issue No. 2. How much roading is needed on the Forest to provide adequate access while maintaining wildlife and fish habitat, visual quality, water quality, and soil stability?

Roads Issue No. 3. How much road closure should occur and what types of roads should be left open to the public?

Roads Management Concern No. 1. Transportation planning needs to be more responsive to and better coordinated with logging systems.

Public comments received on the Revised Draft EIS indicated concern that construction of projected miles of roads on the Forest will increase sediment, decrease the quality of wildlife habitat, and contribute to the spread of noxious weeds. A commenter suggested that the present mileage of road was adequate and that old roads should be obliterated and reseeded prior to further construction of new roads. One response stated that the Lolo Forest could reduce future increases in road mileages by intensively managing timber on the most suitable sites. Several commenters expressed a need for more permanent road closures for wildlife protection.

SOCIAL AND ECONOMIC

About 60 percent of the land in western Montana is Federally owned. The way these lands, including those comprising the Lolo, are managed affects the lives of all people to some extent. Economic dependency on Forest resources is high; for example, the wood products industry provides about 50 percent of the area's income. The Lolo's publics represent the full spectrum of occupations, ages, wants, and needs. The Forest is important in the lives of people as a place to play as well as work.

The public issue related to Social/Economic concerns reflects interest in the impacts of land assignments on local communities and how those needs will be considered in the assignment process. The issue is complicated by the fact that local timber industry looks to the Forest to make up for timber now extracted from private lands which will be near depletion at the end of this decade. Some feeling exists that the Forest Service has a responsibility to provide for the needs of local industry because the agency encouraged companies to settle and expand in this area. The question of "below cost" sales must also be considered in this issue, in addition to consideration of the economic importance of minerals.

In order to resolve the following issue, the Lolo Forest used a linear program to provide data on the physical and biological impacts and reource outputs of various assignments on local communities; identified public values that were used to identify a variety of alternative management scenarios that displayed tradeoffs, costs, and benefits; estimated economic and social impacts on local communities through an analysis by the Forest Interdisciplinary Team; determined ways to meet an increased demand for timber in future years if the market improves.

Social/Economic Issue No. 1. How will specific management assignments in the Forest Plan affect local community economics?

Public comments received on the Revised Draft EIS reflected a major concern among local residents dependent on the timber industry that the Forest display an annual volume of timber that is similiar to historic cut levels of the 1970's. Many commenters also felt that the Forest Service has a responsibility to local communities dependent on the timber industry. Some commenters felt that military maneuvers are not appropriate on National Forest lands near residental areas. A response questioned the cost effectiveness of the Proposed Action based on its comparison to other alternatives displayed. Values used for some resources were also questioned.

VISUAL QUALITY

Management of the Lolo Forest for a variety of products and services results in visible evidence of that management. Some past activities did not give adequate attention to the Lolo's beautiful mountain scenery that provides the backdrop for sections of major Federal and State highways as well as many Forest roads used by recreationists. Some areas of the Forest are more visually sensitive than others to management activities. Management activities must continue, but the Lolo's scenery is an important "product" to residents and travelers alike in western Montana.

The public issue related to the visual resource reflects concerns about the size of areas where the landscape would be altered; the projected length of time that changes in the landscape would be visible; the need for changes in appearance to be reasonable and controlled; the need to preserve scenic beauty; and the importance of social and economic considerations when making decisions about visual quality.

In order to resolve the following issue, the Lolo Forest identified particular visual objectives for different parts of the Forest and analyzed costs for maintaining visual quality.

Visual Quality Issue No. 1. How much change from the natural-appearing landscape should take place and where should it occur, considering the public's social and economic needs?

Public comments received on the Revised Draft EIS indicated that it is difficult to compare visual quality objectives among alternatives based on the information presented. It was suggested that acres of suitable timber assigned to each visual quality class would be more meaningful.

WILDERNESS

The Lolo Forest currently contains all or portions of four wilderness areas: Welcome Creek, Rattlesnake, Selway-Bitterroot, and Scapegoat, totaling 145,734 acres, of which 139,708 acres are National Forest System lands. Approximately 44 percent of the Forest is roadless with 7 percent being wilderness.

Public issues related to the Wilderness resource resulted from a revision of the National Forest Management Act (NFMA) Regulations to include Wilderness as a resource to be analyzed in the Forest Planning process. While the Forest Service cannot designate wilderness, it can recommend wilderness in the Forest Plan. Designation is accomplished through the legislative process.

In order to resolve the following issues, the Lolo Forest adjusted the inventory of roadless areas from the Roadless Area Review and Evaluation (RARE II) to reflect changes to areas since that inventory was completed; analyzed individual roadless areas for their wilderness potential; included wilderness prescriptions as a potential prescription in the analysis process; and developed alternatives that considered a mix of areas for wilderness recommendation.

Wilderness Issue No. 1. What roadless areas should be recommended for wilderness on the Lolo National Forest?

Wilderness Issue No. 2. How should the roadless areas that are not recommended for wilderness be managed?

Public comments received on the Revised Draft EIS were mixed. Some commenters felt that the Forest should not recommend additional wilderness. Many responses suggested that the Forest should recommend additonal Wilderness to include areas listed in the Governor's May 10, 1984, recommendation to the Montana Congressional Delegation. This includes the Great Burn, the Clearwater/Monture additions to the Scapegoat Wilderness, Cube Iron/Silcox, the Lolo Creek addition to the Selway Bitterroot Wilderness, an addition to the Welcome Creek Wilderness, and Stony Mountain. One response suggested that the elimination of the Irish Basin/Cache Creek area from the Great Burn recommendation is reason to appeal the Plan.

Records leading to the identification of major issues are available for review at the Forest Supervisor's Office, and more detailed information about the process is found in Appendix A of this document.

E. Changes Between the Draft and Final EIS

Following publication of the Revised Draft EIS and proposed Forest Plan in February 1985, copies were mailed to 1,108 persons on the mailing list and others who asked for copies during the comment period. The Forest received 481 comments covering a wide variety of subjects relating to the Forest Plan and Revised Draft EIS. The comments and Forest Service responses are found in Chapter VI of this document.

This Final Environmental Impact Statement has been prepared according to revisions in the National Forest Management Act Implementing Regulations (36 CFR 219.17) addressing wilderness.

The Final EIS reflects responses to public comments about analysis and projected outputs and additional information based on agency direction; while no new alternatives were developed, the Proposed Action was modified to reflect some additional wilderness recommendations. Alternative maps were published and distributed with the RDEIS. As no changes were necessary, these maps were not included with this document, but are available on request.

Clarification was made on the planning period to distinguish between the effects of actions in the first decade (the plan period) and those projected for future decades (the remaining analysis period). The discussion of effects of forest management on the grizzly bear has been expanded to address concerns expressed through individuals and agency comments.

The effects of timber management have expanded discussions on silvicultural systems, logging methods, slash control, site preparation, reforestation, and timber stand improvement for clarification.

The minerals section has been rewritten to describe the environmental effects of mineral development. The cultural resources section has been expanded to include a full description of the future direction for management. A discussion of the energy corridors (existing and potential) has been added. References to the Threatened and Endangered Species Act have been changed to the Endangered Species Act. The Forest has developed a contingency plan for reestablishing the peregrine falcon. The dispersed recreation section has been rewritten to better describe changes between alternatives.

The acreage in proposed wilderness for the Proposed Action has been increased by 11,670 acres. The acreage is located in Lolo Creek (3,990 acres) and would be an addition to the Selway-Bitterroot Wilderness, and in Cache Creek (7,680 acres) which would be added to the proposed Great Burn Wilderness.

Changes to the Final EIS also includes a rewrite of the economic analysis following the latest direction from the Chief of the Forest Service. These changes are found in the discussion in Chapter II, sections 16 through 19. A discussion of "below-cost" timber sales has been added in Chapter II, section 15.

The water and soils portions of Chapters II and IV have been rewritten to discuss downstream effects. The discussion on changes and comparison of the visual quality by alternative has been rewritten. A discussion on the reasons for road closures has been added to Chapters II and IV.

Other changes reflect errors found in the review of the document. A change is in road mileages that were shown in Table II-36 and the similiar Table IV-15. Another major change is in the fish populations, which have been revised to take into account the latest information. Numerous editorial changes were made to clarify the wording as several people were concerned about the readability of the DEIS. The Final EIS also has a new format to make it easier to read. Table titles and descriptions have been clarified where it seems that additional description is helpful.

Changes in the Forest Plan are in response to public suggestions about strengthening goals and policies, adding direction to management areas, and strengthening the monitoring plan. Format changes based on agency direction include a new section displaying objectives and Resource/Activity Summaries and the renaming of Forest-wide "Policies", "Standards", and "Guidelines" to Forest-wide "Standards".

Additional changes to the Forest Plan resulting from public comments include incorporation of the substance of the Rock Creek Agreement of 1973 in Chapter IV, Rock Creek; revision of the implementation chapter to include direction for evaluation of projects to meet water quality goals; and the incorporation of results of the Final Report of the Montana Cooperative Elk Logging Study. A research need has been added to the Forest plan on noxious weed control.

F. Reader's Guide

The remainder of the FEIS is organized as follows:

Chapter II describes alternatives, showing the resource outputs, costs, benefits, and major effects of meeting the objectives of each alternative. The environmental, economic, and social effects of alternatives are briefly compared.

Chapter III provides a brief discussion of the existing condition of physical, biological, social, and economic components of the environment that may be affected by Forest management.

Chapter IV identifies the environmental consequences which could result from Forest management activities scheduled in each alternative.

Chapter V lists the document preparers.

Chapter VI gives an overview of public participation activities; discusses how public comments were used; summarizes the public comments; provides a copy of the comments received from other agencies, elected officials, and Indian Tribes; and the Forest Service response to these comments.

Appendices provide detailed subject information as follows: issue identification in Appendix A, description of the analysis process in Appendix B, and site specific roadless area data in Appendix C.

The Glossary contains definitions of technical terms and abbreviations.

CHAPTER II - ALTERNATIVES

A. Introduction

This chapter presents the development, description, and comparison of alternative ways of managing the Forest's land and resources. The development process involves an analysis of the management situation which includes identification of ranges of goods, services, and uses that are feasible; projections of demand; potential to resolve issues and concerns; the technical, economic, and environmental feasibility of providing the levels of goods, services, and uses resulting from assigned objectives; and the need to establish or change management direction. Basically, this step identifies the capabilities of the Forest (see section B). The range of alternatives considered in detail, as well as those eliminated from detailed study, were defined by completing the analysis of the management situation.

The alternative descriptions identify the objectives of each alternative, where the alternative fits in the range, and how it responds to issues. The resource, economic, social, and proposed land use results are also shown (see section C). Section D compares alternatives by resource outputs, social and economic effects, response to major issues, and nonpriced benefits.

The maps of alternatives that were provided with the Revised Draft Environmental Impact Statement are still current. These maps display visually the location of management emphasis areas for each alternative. The map for the Proposed Action, which displays management areas, is republished with the Forest Plan.

The following changes have been made in this chapter between the draft EIS and Final EIS.

The discussion of effects of forest management on the grizzly bear has been expanded to address concerns expressed through individuals and agency comments. The text has been changed to clarify the causes of grizzly bear mortality. Corrections have been made to the Management Situation boundary where inconsistencies were found. (Management Situation is explained on page II-60.) The Forest Plan standards were reworded to clarify management direction.

The Lolo Creek addition is recommended for inclusion in the Selway-Bitterroot Wilderness Area. People responding to the RDEIS recommended this addition. The Cache Creek addition to the proposed Great Burn Wilderness has also been recommended for addition to the wilderness system.

The discussion on the economic effects has been rewritten to clarify the differences between Forest Plan alternatives. These changes are found in sections 16 through 19. A discussion of "below cost" timber sales has been added in section 15. The dispersed recreation section has been rewritten to clarify the differences between alternatives and expected recreation use.

A discussion of the energy corridors (existing and potential) has been added. This discussion includes the status of designating corridors and the potential corridors identified in the draft Pacific Northwest Long Range East-West Energy Corridor Study, Phase I, Bonneville Power Administration, December, 1977.

The cultural resources section has been expanded to include a discussion on the direction of future management. The discussion on Threatened and Endangered species now refers to a contingency plan for the peregrine falcon on the Forest. The road mileages were changed in Table II-36 to correct an error. The fish population numbers have changed to reflect the results of a study in 1984, funded by the Bonneville Power Administration and accomplished by the Montana Department of Fish, Wildlife, and Parks.

Numerous editorial changes were made to clarify the wording and make the document easier to read.

B. Alternative Development

1. Overview

Forest planning began by identifying public issues and management concerns. Refer to Appendix A of this document for a description of this process. Once the issues were finalized, information was developed to determine the Forest's capability to respond to each issue in the analysis of the management situation for the Forest. Base resource data, economic information, and environmental/legal constraints were examined. Benchmarks were developed and analyzed to measure resource and economic interrelationships and output ranges for alternative development.

Alternatives were developed to respond to issues, present net value (PNV), and net public benefits (NPB). Present net value is the primary measure of all priced outputs. All costs of managing the Forest are included in PNV. All priced benefits, market and nonmarket, with assigned values are also included. These include timber, range, developed and dispersed recreation, and hunting. The nonpriced outputs considered in this analysis include: wilderness and roadless areas, recreation diversity and quality, community well being, watershed/fisheries habitat quality, visual quality, plant and animal community diversity, and threatened and endangered species habitat protection. The Comparison of Alternatives section (II.D.) and Appendix B contain further discussions of nonpriced benefits. The net public benefit of forest management is the overall value to the Nation of all benefits minus all costs, regardless of whether the costs and benefits are expressed in priced or nonpriced terms.

A single, numeric NPB value was not calculated since monetary values associated with some resources such as timber cannot be added to the qualitative value of nonpriced benefits such as a scenic view. An understanding of the various types of values and interrelationships associated with Forest outputs aids decisionmakers in the selection of an alternative that maximizes net public benefits. See Appendix B, section IV for a further discussion of NPB.

The alternative development process used is outlined in 36 CFR 219.12(f). These regulations include the following goals for alternative formulation:

- Provide a basis for identifying the alternative that maximizes net public benefits.

- Distribute alternatives between the minimum and maximum resource potential and reflect a range of environmental resource uses and expenditure levels.

- Formulate alternatives to facilitate analysis of opportunity costs and tradeoffs.

- Formulate alternatives to evaluate effects on present net value, benefits, and costs.

- Provide different ways to respond to major public issues.

In the Forest planning process, an alternative is a given combination of resource uses and management prescriptions that achieves a certain management emphasis. Under the NFMA Regulations, development of alternatives, including the proposed action, is based on a set of "building blocks". These are the management prescriptions, each of which is a strategy for managing the resources of an area of land. Each of the management prescriptions used in the Forest planning process is made up of compatible management practices, which are specific resource actions or treatments that accomplish a management goal.

The alternatives considered in this chapter represent different combinations of management prescriptions in different locations to provide varying levels of output, goods, and services. The set of management prescriptions is the same for all alternatives; the mix of acres related to each prescription is displayed in terms of management areas (MA's) and is different by alternative. Management Areas are site specific areas on the Forest and are identified in the Forest Plan.

2. Analysis of the Management Situation

The analysis of the management situation determined resource supply potentials by establishing minimum and maximum production levels called benchmarks. A level was also established from which the costs and effects of applying regulations and policy constraints were measured. Production capabilities were determined for single resources and for a set of multiple resource outputs that maximized present net value. This analysis established the benchmark levels required by NFMA regulation 219.12e.

a. Benchmark Levels

Benchmark levels were developed to define resource supply potentials of the Forest and economic relationships of the resources. Production capabilities were determined for a minimum level, for single resources, and for a set of multiple resource outputs that maximize present net value (NFMA Regulation 219.12e). The computer model FORPLAN was used to help determine the resource supply potentials.

The minimum level and maximum supply potentials that define the limits of supply are not alternatives. The minimum level potential is not responsive to public issues and management concerns and does not provide for multiple use and long-term sustained yield capacity of the several products and services that are available from the National Forest as directed in the Multiple Use-Sustained Yield Act of 1960.

The maximum supply potentials are not alternatives because the maximization of one resource is at the expense of other resources and seriously reduces the total values that can be achieved from the Forest. Selected benchmarks are compared to the production that would occur under the alternatives. The benchmark levels and analysis are summarized in this chapter.

Regulation and policy constraints applied to benchmarks have in most cases the effect of reducing the maximum resource supply potential. NFMA Regulation 219.27 specifies that certain minimum management requirements be included in the planning process. The methods to meet these minimum management requirements include developing standards and appropriate practices for management prescriptions; assignment of management prescriptions and intensities to analysis areas in FORPLAN; and applying specific constraints in FORPLAN. A detailed discussion of minimum management requirements, benchmarks, and results can be found in Appendix B of this document.

Constraints commonly applied to the benchmark levels, except as noted in the benchmark description, are as follows:

(1) Soil and water protection to maintain the productive capacity of the lands.

(2) A nondeclining long-term sustained yield capacity in the Forest's timber harvest.

(3) Assurance of harvestable-size timber available in the decades immediately following the end of the planning horizon and in an amount expected through a timber ending inventory.

(4) Non-forest lands, and other lands not suitable for timber production were not assigned prescriptions that include timber harvest to assure that lands assigned to timber harvest prescriptions are tentatively suitable for timber harvest.

(5) Wilderness prescriptions are the only ones available for designated wildernesses to assure the legal and regulatory requirements for management.

b. Benchmark Descriptions and Analysis

(1) Maximize Present Net Value (Benchmark h)

This benchmark establishes the mix of resource uses and schedule of outputs and costs that maximized present net value using market and nonmarket assigned values. Most constraints are removed from the model, including clearcut acres, nondeclining flow of timber harvest, and scheduling of harvests to benefit other resource values such as elk forage production. The only constraints applied are those that will maintain the productivity of the land and maintain an ending timber inventory to assure long-term productivity. The constraint applied to timber harvest had a range of +25 percent to -10 percent for decades 1 through 3, and +25 percent to -25 percent for decades 4 through 12, which allowed the model to schedule timber harvest in a way that increased PNV compared to alternatives that forced even flow. The existing laws and regulations pertaining to wilderness and areas recommended for wilderness are also recognized. The objective function is to maximize the present net value.

Table II-1: Average Annual Resource Production Under the Maximum Present Net Value Level

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Potential Livestock Use (MAUM)	15.9	15.9	15.9	15.9	15.9
Potential Developed Recreation(MRVD)	405	405	405	405	405
Potential Dispersed Recreation (MRVD)	1635	1635	1635	1635	1635
Allowable Sale Quantity (MMBF)	123	154	193	188	234
Water Yield Increase (Mac-ft)	69.3	96.9	120.4	144.7	188.4
Big-Game Winter Forage (MAUM)	27.4	27.5	51.7	69.6	98.1
Elk Summer Quality Index (% of Existing Situation	115	115	115	115	115
Elk Population Potential (M Animals)	8.2	8.2	8.2	8.2	8.2

Present Net Value = $379 MM

(2) Maximize Timber/Range (Benchmark i)

The maximum legal capability of the Forest to produce timber was determined by this benchmark. Timber reached maximum production in decade 1 at 219 MMBF.

The maximum production potential recognizes the need to protect soil and water resources and that lands producing less than 20 cubic feet per acre per year are suitable for timber management.

Maximum Base Sale Schedule with Nondeclining Flow
and Current Direction Base Sale Schedule (MMBF)

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Maximum Potential	219	219	219	219	219
Current Direction	118	140	140	140	140

Present Net Value = $223 MM

The maximum potential assumes that existing wilderness will be declassified and that all proposed wilderness areas will not be classified. Production values for the other resources are displayed in Table II-7.

(3) Maximize Wildlife Habitat (Benchmark j)

The purpose of this benchmark was to analyze the potential for big-game habitat based on the availability of forage on winter range. This benchmark established the maximum potential for big game based on forage production. The maximum production potential for wildlife habitat improvement is measured in terms of big-game animal unit months (AUM's) of forage production on winter range and by the summer range quality index.

It is not possible to maximize habitat for all of the species groups concurrently, as management activities that would benefit one group could be detrimental to others.

Table II-2: Winter Forage Under Maximum Potential and Current Direction (Average Annual)

	1981–1990	1991–2000	2001–2010	2001–2020	2021–2030
Winter Forage, MAUM's					
Maximum	43.0	46.5	47.9	47.8	48.8
Current	20.8	21.2	23.9	24.9	23.6

Average Annual Resource Production Under Maximization of Winter Forage by Time Period

	1981–1990	1991–2000	2001–2010	2001–2020	2021–2030
Potential Livestock Use (MAUM)	14.3	17.5	19.7	20.3	21.1
Potential Developed Recreation (MRVD)	304	304	304	304	304
Potential Dispersed Recreation (MRVD)	1437	1739	1906	2063	2216
Allowable Sale Quantity (MMBF)	159.4	159.4	159.4	159.4	159.4
Water Yield Increase (M ac-ft)	86.7	126.8	154.4	181.1	182.5
Total Water Yield (MM ac-ft)	3.61	3.65	3.68	3.71	3.71
Big-Game Winter Forage (MAUM)	43.0	46.5	47.9	47.8	48.8
Elk Summer Range Quality Index (% of Existing Situation)	131	131	131	131	131
Elk Population Potential (M Animals)	12.2	13.1	13.1	13.1	13.1
Fish Population Potential (M Number)	665	623	659	655	652
Roads Needed for Management					
Collector (Miles)	3000 will increase over time to				3110
Local (Miles)	2020 will increase over time to				8728
Visual Quality (% of Sensitive Areas Maintained)	46	46	46	46	46
Wilderness (M acres)	343.7	343.7	343.7	343.7	343.7
Roadless Area Management (M acres)	140.2	140.2	140.2	140.2	140.2
Total Budget (MM-1978 dollars)	22.11	22.08	19.44	18.10	20.59

Present Net Value = $223 MM

In order to attain the maximum big-game habitat production potential, type conversions (timber to browse) and deregulation of timber harvests on approximately 163,266 acres of commercial forest land would be necessary.

Under the maximum potential, the wildlife species requiring old-growth timber and snags would experience a sharp decline in population and one to three species may be eliminated from the Forest. The riparian marsh species would also decline but to a lesser degree. Populations of other species would remain stable or increase.

(4) Maximize Wilderness (Benchmark k)

Wilderness management assignments were maximized in order to explore the foregone monetary values and resource outputs by comparison with Benchmark h. This benchmark was used to develop the greatest amount of wilderness by assigning all of the inventoried roadless area to wilderness. The wilderness benchmark represents an attempt to preserve the natural environment to the maximum extent possible on the Forest. Timber management and development activities were confined to the most productive sites presently developed and those not having soils, wildlife, or visual constraints. The maximum potential for wilderness on the Lolo is approximately 44 percent of the Forest, or 915,898 acres. Table II-3A shows management practices and outputs associated with the maximum wilderness benchmark.

Table II-3: Average Annual Resource Production Under the Maximum Wilderness Benchmark

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Potential Livestock Use (MAUM)	12.6	11.3	11.3	11.3	11.3
Potential Developed Recreation(MRVD)	405	405	405	405	405
Potential Dispersed Recreation (MRVD)	2238	2238	2238	2238	2238
Allowable Sale Quantity (MMBF)	90	120	120	126	126
Water Yield Increase (Mac-ft)	67.0	85.7	100.3	115.1	130.0
Total Water Yield (MM ac-ft)	3.61	3.63	3.64	3.66	3.67

Table II-3 (Continued)

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Elk Summer Quality Index (% of Existing Situation	82	82	82	82	82
Elk Population Potential (M Animals)	6.4	6.4	6.4	6.4	6.4
Fish Population Potential (M Number)	970	974	978	982	987
Roads needed for Management					
Collector (Miles)	2800	Increases over time to			2996
Local (Miles)	1800	Increases over time to			8112
Visual Quality (% of Sensitive Areas Maintained)	75	75	75	75	75
Wilderness (M acres)	916	916	916	916	916
Roadless area Management (M Acres)	21	21	21	21	21

Present Net Value = $203.2 MM

(5) Minimum Level (Benchmark 1)

This benchmark defined the minimum costs of public landownership and the resource outputs which are incidental to Forest management. Benchmark 1 served as a minimum reference point to develop and/or test alternative activities, outputs, and costs which result from Forest Service activities. The purpose of the minimum supply potential is to show the unavoidable costs and benefits that occur as long as the Forest is in public ownership. It reflects the cost of managing only the land resources. The decision to incur these costs remains with the decision to retain the land in Federal ownership and not within the authority of the Forest Service planning process.

Management provides only those benefits which are necessary to protect the life, health, and safety of the incidental user; preventing environmental damage to National Forest and adjoining or downstream lands due to altering the natural successional processes; and administering unavoidable special uses and leases.

The outputs derived under this potential and shown in Table II-4 reflect management practices and associated costs and outputs that protect soil and water resources and prevent permanent impairment of the productivity of the land. The minimum levels are included as the base level in every alternative. Examples of management activities include fire suppression, insect and disease control, law enforcement, search and rescue, special use management, and a decreasing level of road and trail maintenance over time. Incidental outputs include dispersed recreation use, water yield, and natural wildlife habitat.

Table II-4: Average Annual Resource Production Under the Minimum Level by Time Period

	1982-1985	1986-1990	1991-2000	2001-2010	2011-2020	2021-2030
Livestock Forage (MAUM)	12.8	0.5	0.5	0.5	0.5	0.5
Dispersed Recreation (MRVD)	1050	945	803	682	682	682
Developed Recreation (MRVD)	145	0	0	0	0	0
Allowable Sale Quantity (MMBF)	0	0	0	0	0	0
Water Yield (MM ac-ft)	3.4	3.4	3.4	3.4	3.4	3.4
Elk Net Habitat Productivity (% of Existing)	107	106	100	91	76	60
Elk Population Potential (M animals)	9.9	9.7	9.3	8.4	7.0	5.6
Aquatic Habitat/Fisheries						
Roads in Riparian (useable miles)	1435	1350	820	530	280	280
Change in Amount of Riparian Roaded from Existing (%)	+5	+2	-38	-60	-79	-79
Fish Population Potential (M fish > 6")	856	856	856	888	885	883
Prescribed Burning (M ac)	0	0	0	0	0	0
Access						
Roads Needed for Management						
Collector (Miles)	3000	0	0	0	0	0
Local (Miles)	2020	0	0	0	0	0
Roads Open for Use (Miles)	1750	1650	1000	650	650	650
Trails Open for Use (Miles)	1500	1000	500	300	300	300
Roadless Management Areas (M ac)	375	375	375	375	375	375
Wilderness Management 1/ Areas (M ac)	345	345	345	345	345	345
Visual Quality (% of existing sensitive areas maintained	100	100	100	100	100	100
Total Budget (MM-1978 dollars)	3.2	2.6	2.6	2.6	2.6	2.6

Present Net Value = $86 MM

1/ Wilderness acres shown include proposed roadless acres recommended for wilderness in the RARE II EIS; the Minimum Level Benchmark was compiled previous to the revision of the NFMA Regulations.

(6) Constrained Budget/Current Action (Benchmark m)

Benchmark m defined the current level of goods and services with a constrained budget. It results in the most likely amount of goods and services expected in the future under current management direction with budget restrictions as displayed in Table II-5.

Table II-5: Average Annual Resource Production Under the Constrained Budget/Current Action All Decades

Resources	All Decades
Livestock Forage (MAUM)	13.8
Dispersed Recreation (MRVD)	1181
Developed Recreation (MRVD)	365
Allowable Sale Quantity (MMBF)	118
Water Yield (MM acre feet)	3.2
Elk Net Habitat Productivity (% of existing)	100
Elk Population Potential (M animals)	9.3
Aquatic Habitat/Fisheries	
Roads in Riparian (useable miles)	997
Change in Amount of Riparian Roaded from existing %	+13
Fish Population Potential (M fish > 6")	905
Prescribed Burning (M acres)	0
Access	
Roads Needed for Management	
Collector (miles)	3323
Local (miles)	9852
Roads Open for Use (miles)	2208
Trails Open for Use (miles)	1825
Roadless Management (M acres)	179
Wilderness Management (M acres)	325
Visual Quality (% of existing sensitive areas maintained)	100
Total Budget (MM-1978 dollars)	11.3

Present Net Value = $170 MM

The following resources were also analyzed:

Recreation

The maximum production potential is expressed in thousands of recreation visitor days (MRVD's) and represents the physical capacity of the land and developed facility base. The maximum potential does not vary by time period because the full assignment of suitable lands to recreation use is made at the outset and cannot be increased.

Table II-6: Annual Recreation Use: Maximum Production Potential and Continuation of Current Direction (MRVD's)

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Developed Recreation					
Maximum Potential	1062	1062	1062	1062	1062
Current Direction	365	392	375	386	405
Dispersed Recreation					
Maximum Potential	4675	4675	4675	4675	4675
Current Direction	1181	1283	1392	1478	1536

In the dispersed recreation category, motorized and nonmotorized recreation use cannot be maximized concurrently. For land use assignment purposes, the recreation groups are mutually exclusive and the same acres could not be assigned to both motorized and nonmotorized use, as indicated below:

	Nonmotorized Recreation	Motorized Recreation	TOTAL
Use Potential When Maximizing Nonmotorized Recreation	1554	2139	3693
Use Potential When Maximizing Motorized Recreation	635	4040	4675

Water

The maximum amount of water that can be produced would result from the complete removal of timber. This is neither feasible nor desirable as it would result in severe damage to the soil resource and the stream channels.

The water yield increase that would result from maximizing timber production represents the highest water yield the Forest could attain. Even this yield would have a detrimental effect on stream channel stability, and the need for structural protection would increase over time. Total water yield and the volume of increase are shown in Table II-7.

Current water production is approximately 3.5 million acre-feet per year. The threshold beyond which a potential for stream channel damage exists occurs with a volume increase of 131,000 acre-feet per year (total annual yield of 3,631,000 acre-feet).

Table II-7: Average Annual Resource Production Under Maximization of Timber, Range, and Water

	1981-1990	1991-2000	2001-2010	2011-2020	2021-2030
Potential Livestock Use (MAUM)	16.3	20.0	22.9	25.4	25.9
Potential Developed Recreation (MRVD)	304	304	304	304	304
Potential Dispersed Recreation (MRVD)	1437	1729	1906	2063	2216
Allowable Sale Quantity (MMBF)	219	219	219	219	219
Water Yield Increase (M ac-ft)	103.6	166.6	189.3	205.2	210.2
Total Water Yield (MM ac-ft)	3.63	3.69	3.71	3.73	3.73
Big-Game Winter Forage (MAUM)	19.3	19.3	19.3	20.3	20.7
Elk Summer Range Quality Index (% of Existing Situation)	157	157	157	157	157
Elk Population Potential (M Number)	9.4	9.4	9.4	9.8	10.0
Fish Population Potential (M Number)	665	657	650	643	635
Roads Needed for Management					
Collector (Miles)	3000 increases over time to				3528
Local (Miles)	2020 increases over time to				9870
Visual Quality (% of Sensitive Areas Maintained)	38	38	38	38	38
Wilderness (M Acres)	0	0	0	0	0
Roadless Area Management (M Acres)	132.2	132.2	132.2	132.2	132.2
Total Budget (MM 1978 dollars)	25.43	25.45	23.04	21.61	20.93

Present Net Value = $223 MM

Timber output has the greatest impact on timber-related employment and income. Thus, Benchmark i with the highest timber output has the greatest positive impact on jobs and income. Benchmarks h and j have comparable timber volumes and similar job and income impacts. Benchmark m has a reduced timber volume because of a constrained budget, and Benchmark k has a lower timber volume because of a lower acreage assigned to timber management. Benchmarks k and m have relatively low job and income impacts when compared to other benchmarks. With the exception of Benchmark l (Minimum Level), all benchmarks exceed expected recreation demand in the first decade and would have no effect on changes in employment and income between benchmarks in this analysis.

Table II-8: Annual Employment and Income Impacts of Benchmarks, First Decade

Benchmark	Max PNV h	Max Timber Range, Water i	Max Wildlife j	Max Wilder-ness k	Min Level l	Constrained Budget/ Current Action m
Jobs	3,014	4,163	3,326	2,505	0	2,874
Income	31.5	51.3	38.9	27.0	0	30.1

3. Range of Alternatives

a. Information Used to Develop Alternatives

The benchmarks presented in the previous section were used to develop alternatives that represent a range of resource outputs. For example, the timber and minimum level benchmarks show that the timber base sale levels can range from a minimum of zero to 219 MMBF per year in decade 1. Alternatives were designed to span the benchmark range while meeting policy constraints such as minimum visual quality and minimum acceptable harvest levels. The PNV benchmark was used to determine the cost of meeting alternative objectives and provided a basis for changing alternative activities to optimize PNV while still meeting the objectives.

Public issues and management concerns addressing timber, wildlife and fisheries, recreation, roads, water amd soils, wilderness, range, and visual quality were utilized to develop alternatives which emphasize specific issues or respond to most or all issues to some degree.

Meeting the RPA targets identified in the Regional Guide was considered in one alternative. However, it was eliminated from detailed study as discussed on page II-19.

Each roadless area was recommended wilderness in at least one alternative. And, one alternative recommends most of the Forest's roadless acres for wilderness while evaluating the opportunity for increasing commodity outputs on roaded lands.

b. Adequate Range of Alternatives

In the development of alternatives, those required include: one that maximized timber production and most market opportunities while maintaining as a minimum the maximum modification visual quality objective (Alternative c); one which optimized nonmarket opportunities such as roadless, wilderness, recreation, visual quality, fisheries, and wildlife (Alternative b); and the current program (Alternative a).

These alternatives were examined to determine where they fell in the range of outputs expressed by the benchmarks, and how well they responded to the issues, including the roadless evaluation. Additional alternatives were then identified that would complete the range of outputs for analysis and response to issues.

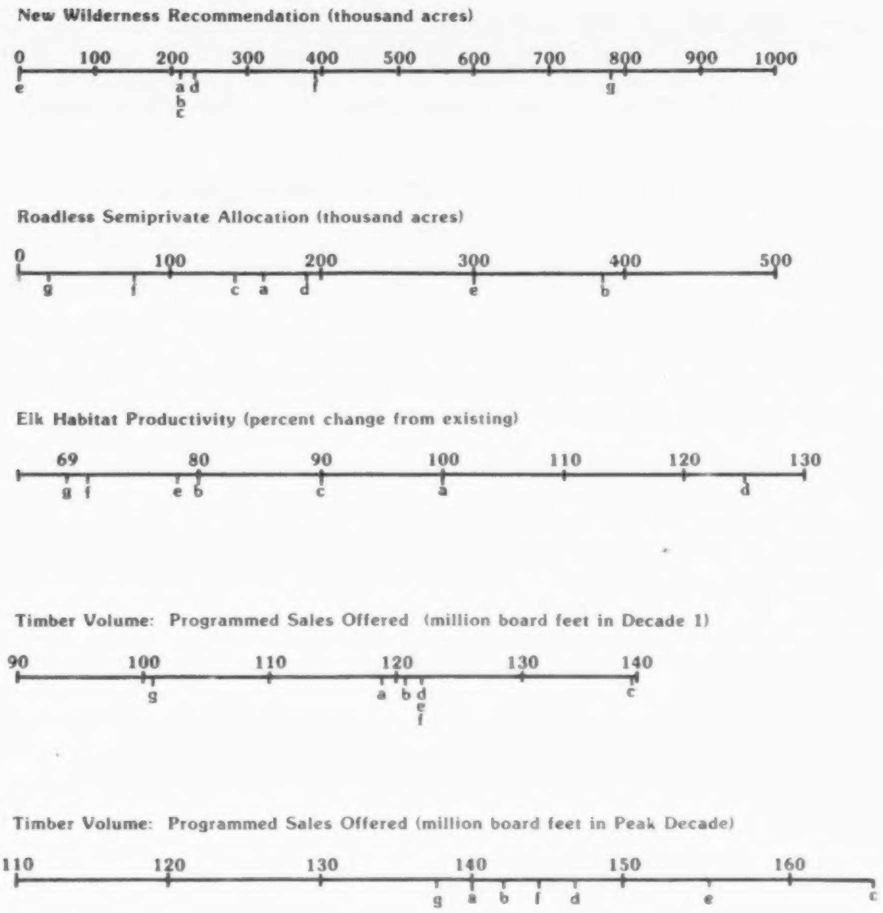
An alternative was developed which was timber, forage, and mineral oriented but responded in varying degree to other issues such as big-game cover/forage relationships, visual quality, and roadless semiprimitive recreation (Alternatives e).

An alternative was designed to emphasize nonmarket values while remaining somewhat responsive to market outputs (Alternative f), and another assigns all roadless areas to wilderness while emphasizing market outputs on currently roaded lands (Alternative g).

The criteria developed to evaluate alternatives was used to identify an additional alternative that attempted to respond to all major issues and concerns (Alternative d). Roadless lands with unique features were recommended for wilderness, while some other roadless lands were recommended to remain roadless to meet semiprimitive recreation and big-game security needs. Visual quality was protected along heavily traveled corridors. Important winter range was protected. Grizzly bear essential habitat was recognized. The timber resource was managed cost effectively, measuring environmental as well as dollar costs and benefits. A departure from nondeclining timber harvest was also analyzed for this set of assignments, objectives, and constraints (see discussion on page II-31.)

These seven alternatives were evaluated against the benchmarks to determine if an adequate range was displayed to respond to major issues. A comparison of alternatives is shown in Figure II-1:

FIGURE II.-1
RANGE OF ALTERNATIVES



c. Constraints Used To Develop Alternatives

Each of the alternatives meets requirements of the NFMA Regulations. All alternatives are achievable because the output levels of each are below the maximum supply potentials identified in the Analysis of the Management Situation.

Multiple use coordination was ensured by applying requirements such as minimum acceptable habitat diversity and water quality to each alternative. Some of these requirements were applied as constraints in the linear program model. Others appear as Forest-wide direction in Chapter II of the Forest Plan. This direction applies to all areas of the Forest and is assembled as a separate chapter to emphasize the all-inclusive nature. More specific management standards appear in the direction for each Management Area in the Forest Plan (Chapter III).

In accordance with 36 CFR 219.14, lands that were tentatively identified as available, capable, and suitable for timber production were assessed within the linear program model to determine the costs and benefits for a range of management intensities and production levels for wood fiber production. Assessments for each alternative were made assuming different production levels and constraints such as nondeclining flow and long-term sustained yield capacity.

Another assessment was made to identify the single management intensity per land category (lands with similar management costs and returns) which returned the largest present net value. Constraints such as nondeclining flow and long-term sustained yield were not used.

A 4 percent discount rate was used for all of the analyses.

Existing wilderness was maintained in all alternatives. Therefore, the focus of alternative discussion is on the nonwilderness lands.

Constraints specific to alternatives are discussed in Appendix B, section VII c.

4. Alternatives Considered and Eliminated from Detailed Study

The following discussion addresses additional alternatives considered in the planning process and the reasons they were not studied in detail nor included in the range of alternatives displayed for full analysis. When practical, the linear programming model was used to predict the outputs associated with each alternative. Further detail on these alternatives is included in the planning records.

a. An Alternative Run that Addressed Insect Susceptibility

A significant timber loss is occurring in some drainages on the Lolo Forest from epidemic infestations of the mountain pine beetle and associated mortality of lodgepole pine. An alternative was developed to test the feasibility of preventing catastrophic mortality losses from that part of the Forest where losses are most likely to occur.

The objective would be to harvest 75 percent of the mature lodgepole pine during the first 4 decades to salvage mortality, reduce susceptibility to insect attack, and prevent serious loss in the future. To accomplish the objective, the restriction on the number of clearcut acres allowed in each habitat group by decade was removed for the first 4 decades in the impacted area.

Analysis and Reasons for Elimination from Detailed Study

Harvest volumes are similiar to those displayed in Alternative d. The analysis of this run did not result in a departure as the harvest schedule maintained an even flow through the 12 decades. There would be a marked change in species and size of material harvested as lodgepole pine would predominate and lesser amounts of Douglas-fir, ponderosa pine, and western larch would be made available. Adequate insect control and salvage can be provided in other alternatives without the following adverse effects:

Elk habitat and populations are potentially impacted because of spatial and timing problems associated with the high degree of harvest and the reduction of a favorable cover/forage ratio in the lodgepole pine types. A reduction of 10 to 15 percent could be expected for elk populations.

Drainages with large acreages of lodgepole pine would suffer stream channel damage.

A significant impact to the visual resource would be expected as clearcutting would occur at more than two times the present level during the first decade, and up to one third more during the second through fourth decades. The impact would be pronounced because the susceptible lodgepole pine stands are concentrated in only a few of the major drainages.

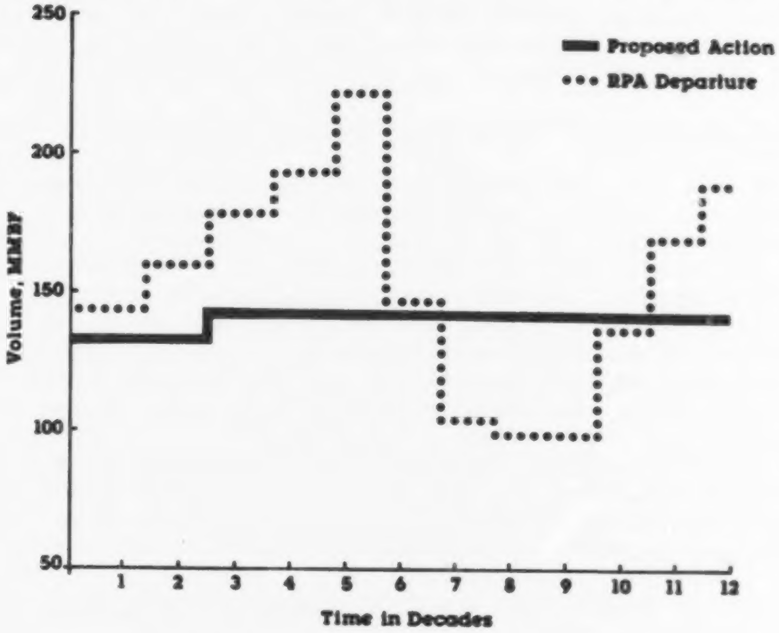
b. An Alternative Run to Analyze the Resource Planning Act (RPA) Objectives

An alternative was developed to meet the Forest's share of the National RPA 1980 objectives as assigned by the Regional Forester, and is referred to as the RPA alternative. The analysis made for this alternative was equal to the analysis made for the Description of Alternatives Considered in Detail (page II-22), except that detailed mapping necessary to ground-truth the solution was not completed. In order to meet the RPA timber objective, departure from the base sale schedule of the Proposed Action (Alternative d) was necessary. The magnitude of this departure prevents the Forest from meeting all the RPA objectives simultaneously in one alternative.

Analysis and Reasons for Elimination from Further Consideration

The RPA alternative would contribute toward satisfying the national demand for timber, but the magnitude of the departure could be disruptive to community stability. While a high supply of material is available in the early decades, this supply is sharply cut in later decades. Unless the high and low supplies can be closely balanced with supplies from private lands, local economies would become less stable. Work forces required to prepare and administer the timber program of either the Forest Service or industry would fluctuate in direct correlation with sales offerings made by each organization.

Figure II.-2
Comparison of Timber Sale Offerings



Population goals for elk and trout cannot be maintained and would be reduced from current levels. Elk population losses would be due to starvation as forage areas are replaced by pole stands of timber; trout populations would decline as a result of sedimentation.

Water quality goals cannot be met due to the need for development and use on sensitive soils such as those derived from Lake Missoula sediments, shale, and granite.

The Forest could not implement the harvest schedule during the first decade because of the high level of sale preparation and the amount of preroading that would be required. The annual amount of capital investment needed for roading would be in excess of $1 million above that required for the Proposed Action (Alternative d). The economic analysis of timber harvest during the first decade indicates a negative net revenue due in part to these investments. There would be a high amount of prescribed burning (and its cost and effect on air quality) needed for site preparation and slash disposal, and acreage requiring treatment is not practical to accomplish during the limited burning season. The drastic departure is not necessary to alleviate timber losses from insects.

The Region's RPA objective is to provide for a moderate increase in commodity outputs and a moderate increase in amenity values. In applying the objectives given the Lolo Forest, a high commodity output level and a decrease in amenity values resulted, with wildlife, fish, and water quality objectives unattainable.

In considering all the effects of this alternative, it is concluded that the imbalance created between timber production and wildlife and watershed values (losses and costs) would not be offset by the high timber production level.

c. Alternative Runs to Address High Market Emphasis

Five alternatives were designed to analyze and display high market emphasis with varying limited response to nonmarket values. They emphasized a high level of intensive timber management to maintain an even flow of sawtimber, intermediate, and small-size products. Motorized dispersed recreation opportunities were generally encouraged, with a low level of construction for developed recreation. A complete Forest road network was developed to provide for resource access, forest product utilization, and recreation. Livestock grazing was encouraged on National Forest System lands and big-game habitat was managed to optimize deer and elk numbers. Visual management objectives were not used to constrain other resource management activities, or in one case, was limited to retention or partial retention on areas adjacent to major highways, campgrounds, or other recreational developments. For the most part, these alternatives recommend only those roadless areas to wilderness that have a limited impact on other multiple use outputs.

Although the high market emphasis alternative runs were similiar in design and outputs, three of them were eliminated from further analysis and not displayed in the range of alternatives because they displayed lower present net values. The remaining two (Alternatives c and e) adequately represent the high market emphasis in the range of alternatives.

d. Alternative Runs to Address Nonmarket Emphasis

Four alternative runs were developed to address nonmarket emphasis. Timber management was constrained in varying ways. Land was assigned for nonmotorized dispersed recreation opportunities with minimal development and disturbance of the Forest environment, and in one alternative provided for some expansion of all types of recreation. Management provided habitat for viable populations of all wildlife for their own well-being as well as recreational viewing and hunting. Livestock grazing was limited to areas with minimal wildlife potential, recreation conflicts, or water quality impacts. Retention and partial retention visual quality objectives are maintained on all identified visually sensitive areas of the Forest. These alternatives recommend varying amounts of acreage for wilderness and roadless management, based on public opinion and a nondevelopment philosophy in managing the Forest.

Although the nonmarket alternative runs were similiar in design and outputs, two of them were eliminated from further analysis and not displayed in the range of alternatives. Those eliminated had less emphasis on roadless management and wilderness recommendations and did not represent public input about wilderness recommendations as well as the other nonmarket alternative runs. The remaining two (Alternatives b and f) adequately represent the nonmarket emphasis in the range of alternatives.

C. Description of Alternatives Considered in Detail

This section begins the presentation of the seven alternatives considered in detail. Each alternative in this section has a schedule of resource outputs and economic data displayed in Table II-39. Resource outputs were projected for 12 time periods.

Six of the seven alternatives described in this section were developed and analyzed through the NFMA planning process outlined in Chapter I. Development of the "No Action" current program alternative (Alternative a) deviated from this process, and its development is described in the discussion of the alternative. The Proposed Action (Alternative d) is the preferred alternative selected in Planning Action 8.

In addition to the descriptions in this document, each alternative is shown on 1/4-inch per mile management emphasis maps. These maps were included with the Revised Draft Environmental Impact Statement and are available on request.

1. Alternative a - Current Direction

The NFMA and NEPA Regulations require inclusion of a "no action" alternative. NFMA Regulations define it as that condition most likely to exist in the future if current management direction would continue unchanged (36 CFR 219.12 (f)(7)). Projecting the effect of this direction on goods and services provided, the costs and benefits of management, and effects on the Forest environment and people are included. This alternative was designed to continue the current program, consistent with existing Unit Plans and District Multiple Use Plans, as amended by Part I of the Forest Multiple Use Plan, policies, standards, and guidelines; and provide resource outputs consistent with existing plans. Responding to issues was not a specific objective in designing the alternative, but those social variables evident in past planning decisions received attention (in that they set land use assignments).

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, 27 percent is recommended for additional wilderness in this alternative, with 21 percent assigned to roadless management, and approximately 52 percent available for development. The wilderness recommendation reflects the recommendations made in the 1979 RARE II Final EIS, a Nationwide study of roadless areas.

b. Recreation and Trails

Dispersed motorized recreation is increased as a result of allowing more collector and local roads to be left open for public use. Semiprimitive recreation opportunities will decrease as areas are developed for timber harvests. Although the development of recreation sites will not increase, there will be a moderate increase in use as a result of upgrading and improving existing sites. Campgrounds and trails are maintained at a low level.

c. Wilderness

The Forest has approximately 139,708 acres of designated wilderness. An additional 211,930 acres are recommended for wilderness in this alternative including portions of the Hoodoo, Bear-Marshall-Scapegoat-Swan, and Quigg Peak roadless areas. (See Appendix C.)

d. Visual Quality

The present degree of visual quality is maintained in visually sensitive areas. Some modification of visually sensitive areas that are not seen from major corridors, trails, and roadways is allowed.

e. Fish and Wildlife

Net wildlife habitat productivity decreases primarily due to more summer range disturbance caused by increases in road access and regulated timber harvest.

Essential grizzly bear habitat will be well protected both by roadless types of assignments which minimize human-caused mortality, and intensive grizzly bear habitat management which emphasizes habitat enhancement.

Aquatic environment disturbances will be at a relatively high level due to the miles of road constructed and the livestock grazing use in riparian areas.

f. Water and Soils

Water yield and sediment production will increase slightly as a result of the design and location of roads and the vegetative treatments.

g. Range

Domestic livestock grazing is low to moderate. The forage production is a result of creating transitory range with timber harvests, especially in riparian areas, and of permitting more livestock use of elk summer range.

h. Timber

The objective is to maintain timber production at a level consistent with objectives to resolve other resource issues. After the first decade, there is a projected increase in regulated timber harvest, but the total allowable sale quantity is similar to other alternatives when the unregulated timber harvest volume is included.

The first decade allowable sale quantity of 111 MMBF/year is the same as the current direction. Projected outputs then gradually increase to an allowable sale quantity of 133 MMBF/year in decade 2 which approximates 66 percent of the long-term sustained yield capacity. Clearcut, shelterwood, and selection harvest are 33, 56, and 11 percent respectively of the acreage harvested in early decades.

i. Minerals

Fewer acres of land with high mineral potential appear under roadless management. This facilitates exploration and development of locatable minerals. There would also be fewer restraints on geophysical exploration for oil and gas. The number of lease applications received would be unaffected. Roads constructed for any activity may require mineral materials (rock) for construction purposes.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

Roading intensifies due to the increased miles of collector roads needed for timber management. Roadless management acres are also reduced. Approximately 3,925 collector miles and 9,250 local miles are needed for management. Approximately 5,020 of these needed miles exist. About 2,208 collector miles remain open for public use, while local roads will generally be closed.

k. Fire

Prescribed fire usage increases slightly in response to a moderate expansion of regulated timber harvest activites. Due to an increase in road access, the potential for man-caused fires resulting from motorized use would also increase.

l. Socioeconomic

In later decades, timber output volumes increase slightly and moderate opportunities exist for economic growth and a corresponding small increase in area employment. Net present value is $175,900,000.

2. Alternative b

This alternative was designed to emphasize nonmarket uses, especially roadless management, visual quality, wildlife, fish habitat, and water quality. Timber, livestock grazing, and minerals opportunities are consistent with these objectives.

Timber management is confined to the most productive sites. Land is managed for nonmotorized dispersed recreation opportunities with emphasis on simple, rustic facilities that require minimal development and disturbances of the Forest environment. Motorized access is limited. Land is assigned and managed to provide habitat for viable populations of all wildlife. Livestock grazing is limited to areas with minimal potential for wildlife/recreation conflicts, and water quality impacts. Retention and Partial Retention visual quality objectives are maintained on all identified visually sensitive areas of the Forest. Prescribed fires are used to promote vegetative diversity and enhance wildlife habitat. Labor intensive practices are encouraged.

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, 27 percent is recommended for additional wilderness in this alternative, with 49 percent assigned to roadless management, and approximately 24 percent available for development.

b. Recreation and Trails

Opportunities for primitive and semiprimitive dispersed recreation are ensured with approximately 76 percent of the currently roadless acres on the Forest (outside of existing wilderness) assigned to roadless management, which also provides for wildlife use. Developed recreation use and capacity are deemphasized in favor of maintaining natural environments.

c. Wilderness

The Forest has approximately 139,708 acres of designated wilderness. An additional 211,930 acres are recommended for wilderness in this alternative, including portions of the Hoodoo, Bear-Marshall-Scapegoat-Swan, and Quigg Peak roadless areas. (See Appendix C.)

d. Visual Quality

Visual quality plays a greater role than in most other alternatives. Nearly all visually sensitive areas are maintained as natural-appearing landscapes.

e. Fish and Wildlife

Wildlife habitat management reflects opportunities to regulate and minimize human influences on wildlife; e.g., assigning forage to wildlife rather than livestock; road closures; identification of wildlife needs in timber management; assignments for grizzly bear emphasizing minimal mortality which will be realized by large blocks of wilderness and backcountry; elimination of grazing allotments in riparian zones where resource damage is occurring. Management for nongame wildlife species encourages wildlife diversity and provides some recreation opportunities.

This alternative has a lower fish population in the future than other alternatives because the "natural" philosophy of this alternative was interpreted to provide for use of direct habitat improvement projects only on those stream segments that had been severely altered by human activity in the past, with the objective of restoring full fisheries potential to these altered stream segments. The greater level of direct habitat improvement proposed on several other alternatives more than compensates for the adverse consequences some of the associated management activities may have on fish habitat in these other alternatives.

f. Water and Soils

Water yield increases over time, but sediment production in riparian areas is at the lowest level of all alternatives as a result of lessened timber management activities.

g. Range

Domestic livestock grazing is reduced below current levels in order to improve conditions to satisfy other needs in riparian areas and on deer and elk winter range. Available animal unit months are a result of more intensive management on the acres suitable for timber.

h. Timber

The objective is to maintain timber production consistent with high emphasis on nonmarket values. Timber management is encouraged on the most productive sites that do not have soils, wildlife, or visual constraints. This results in fewer acres suitable for timber management and lower timber sale volume offerings from the current situation.

The first decade allowable sale quantity of 104 MMBF/year is 6 percent below the current direction (Alternative a). Projected outputs then gradually increase to an allowable sale quantity of 125 MMBF/year in the second decade which is 72 percent of the long-term sustained yield capacity. Clearcut, shelterwood, and selection harvest are 33, 66, and 1 percent respectively of the acreage harvested in early decades.

i. Minerals

Mineral activities, especially prospecting, will be hampered due to a low level of open access roads and a high amount of undeveloped acres. Oil and gas lease applications will be recommended for approval only on the developed areas of the Forest, and then only with protective surface stipulation recommendations. Agency need for mineral materials will be lower because of the low level of new road construction.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

Approximately 3,405 collector miles and 7,164 local miles are needed for management in this alternative. Approximately 5,020 of these needed miles exist. About 1,500 collector miles remain open for public use, while local roads will generally be closed.

k. Fire

Naturally-occurring fire is the principal means of providing for vegetative diversity and enhancing wildlife habitat. The reduced opportunities for access and prescribing fire on winter range reduces the winter range productivity.

l. Socioeconomic

Few opportunities would exist for economic growth due to the emphasis on natural-appearing landscapes. Intensive revenue-producing activities such as timber harvest are traded for an emphasis on visual quality and dispersed recreation. Area employment and net present value are lower than the current program.

3. Alternative c

This alternative was designed to emphasize timber and mineral opportunities and respond to significant components of the wilderness and wildlife habitat issues that can be achieved at little cost to market outputs.

Alternative c emphasizes a high level of regulated timber harvest with investments in cultural practices, primarily on sites with the highest potential rate of return. Expansion of recreation facilities will be confined to areas where demand exceeds supply; low use sites and facilities will be phased out or maintained at minimal service levels. A complete Forest road network will be developed to provide for resource access and cost-efficient utilization of Forest products. Big-game habitat will be managed for deer and elk numbers, attempting to maintain harvestable populations. Livestock grazing will be present to the extent that allotments are economically feasible. Visual management objectives will generally not be used as constraints on other resource management activities. An aggressive program of fire suppression will be pursued except where suppression costs exceed values at risk.

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, 27 percent is recommended for additional wilderness in this alternative, with 19 percent assigned to roadless management, and approximately 54 percent available for development.

b. Recreation and Trails

The lands to be managed as roadless represent those acres on which development costs exceed expected benefits, and the resulting opportunities for primitive and semiprimitive recreation are relatively low. With the emphasis on cost efficiency, development of recreation facilities is confined to areas where demand exceeds supply. Sites and facilities receiving low levels of use would be phased out or maintained at low service levels.

c. Wilderness

The Forest has approximately 130,708 acres of designated wilderness. An additional 211,930 acres are recommended for wilderness in this alternative, including portions of the Hoodoo, Bear-Marshall-Scapegoat-Swan, and Quigg Peak roadless areas. (See Appendix C).

d. Visual Quality

This alternative assigns the fewest areas on the Forest of any alternative to Retention and Partial Retention Visual Quality Objectives, reflecting the emphasis on cost-efficient resource management. As a result, changes in the natural appearance of the landscape will be evident, except where viewed from major highways.

e. Fish and Wildlife

Because of limited response to nongame species issues in this alternative, assignments for old-growth dependent species represent the minimum acres needed to maintain viable populations. Emphasis for grizzly bear within essential habitat represent a bare minimum number of acres needed for recovery. Elk summer range productivity is higher since increased timber harvests can create a beneficial cover/forage mix in the higher elevation range. However, net elk habitat productivity is lower than what currently exists because of a reduction in the winter range productivity.

Aquatic environment disturbances are high as a result of increased roading in the riparian zone, sediment production, and the amount of riparian area disturbed.

f. Water and Soils

Water yield and sediment production levels are relatively high as a result of the timber harvest and grazing activities.

g. Range

Domestic livestock forage production potential increases to the highest level of all the alternatives as a result of increasing forage production on transitory range through timber harvest. However, the negative cost/benefit ratio for providing structural stock controls and improvements reduce the use of the forage.

h. Timber

The objective of this alternative is to maintain a high rate of timber production. Land suitable for timber production increases as does the regulated harvest. Unregulated harvest decreases as a result of reduced emphasis on other resource programs such as maintenance of big-game winter range.

The first decade allowable sale quantity of 130 MMBF/year is 17 percent above the current direction (Alternative a). Projected outputs then increase to an allowable sale quantity of 156 MMBF/year in the second decade which is 74 percent of the long-term sustained yield capacity.

Clearcut, shelterwood, and selection harvest systems are 38, 60, and 2 percent respectively of the acreage harvested in early decades.

i. Minerals

A large number of acres with high mineral potential fall into the roadless category. However, over half of the roadless lands are designated for development. In this alternative, oil and gas leasing is acceptable anywhere on the Forest with a minimum of surface use restrictions. Explorations and development of all minerals is encouraged, although the ability to access the roadless areas will increase the costs of such activities. Demand for mineral materials in support of the timber program will remain close to the existing quantities already being used.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

A relatively extensive Forest road network is necessary for resource management, but closures or use restrictions needed to support objectives such as big-game habitat management are acceptable. Off-road vehicle use would be supported to the extent that restrictions provide protection for big-game habitat.

Approximately 3,925 collector miles and 8,667 local miles are needed for management. Approximately 5,020 of these needed miles exist.

About 1,850 collector miles remain open for public use, while local roads will generally be closed.

k. Fire

Prescribed burning and associated air pollution are at high levels due to the timber harvest program and the need to eliminate the slash buildup and prepare sites for regeneration. An aggressive wildfire suppression program is supported unless suppression costs exceed values at risk, such as where commercial timber values are low to nonexistent.

l. Socioeconomic

Many opportunites exist for economic growth and increased employment in this alternative. Management activities are keyed to protect employment and the economic stability of local communities. As a result of timber management activities, this alternative produces the highest levels of economic growth and employment opportunities. Increased jobs and income are derived directly through the role of the timber industry and the indirect roles of related enterprise such as commercial trade and service industries. This alternative requires the highest total budget of any alternative to implement. Employment opportunities and present net value are high.

4. Alternative d - Proposed Action

This alternative was designed to resolve major issues and management concerns, with a mix of both market and nonmarket uses and outputs. Emphasis is on roadless recreation, wilderness, wildlife habitat, fisheries, visual quality, and timber issues.

Alternative d, which is the Proposed Action, provides for increasing the long-term existing volume of timber sold; increases elk habitat productivity over existing conditions; assigns the necessary acreage to provide for semiprimitive recreation opportunities, rounding out the spectrum of recreation opportunities; maintains the Retention and Partial Retention visual quality objectives in important visually sensitive areas of the Forest, including Forest trails; provides habitat for viable populations of old-growth dependent species in most major drainages on the Forest; protects and regulates activities in essential and occupied grizzly bear habitat; and recommends roadless areas to wilderness which have high wilderness values.

The timber resource will be managed cost efficiently, measuring environmental as well as dollar costs and benefits. Big-game habitat supports an important commodity and provides many recreation opportunities. Other forms of wildlife and fish further serve recreational needs, and function as indicators of the "health" of the Forest ecosystems. Riparian areas support water, fish and wildlife habitat, recreation, and visual objectives. Roadless, undeveloped parts of the Forest contribute to wildlife habitat and recreational objectives, and provide benchmarks against which to measure the effects of management. The Proposed Action emphasizes being good hosts to the public and good neighbors as land managers.

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, 29 percent is recommended for additional wilderness in this alternative, with 23 percent assigned to roadless management, and approximately 48 percent available for development.

b. Recreation and Trails

Dispersed recreation opportunities are emphasized, with developed recreation sites maintained at existing levels.

c. Wilderness

The Forest has approximately 139,708 acres of designated wilderness. An additional 223,600 acres are recommended for wilderness, including portions of the Hoodoo, Bear-Marshall-Scapegoat-Swan, Quigg Peak, and Lolo Creek roadless areas. (See Appendix C.)

d. Visual Quality

The natural-appearing landscape is retained for travelers using highways and major Forest roads, trails, use areas, and water features. It allows for modification of some areas seen from less visually sensitive trails and highways.

e. Wildlife and Fish

Winter forage production and desirable cover/forage ratios for big game are emphasized through vegetative manipulation and achieved by prescribed fire and timber harvest. Essential grizzly bear habitat (Management Situation 1 1/) will be well protected both by roadless types of management which minimize human-caused mortality, and intensive grizzly bear habitat management which emphasizes habitat enhancement. In addition, occupied areas outside of essential habitat (Management Situation 2 1/) will be managed to prevent grizzly bear mortality. This will be done with Forest policy and by the use of restrictive clauses applied to Forest user contracts. This alternative will provide for viable populations of old-growth dependent species in most major drainages. Snags and snag replacements will be retained to the extent practical.

1/ Interagency Grizzly Bear Guidelines, Federal Register, Vol. 50, No. 102, Tuesday, May 28, 1985, p. 2169.

Aquatic environment values are enhanced as a result of applying management prescriptions which protect the riparian zone, and through structural stream improvements to mitigate impacts from water yield increases.

f. Water and Soils

Water yield and sediment production will increase slightly, as a result of the design and location of roads and vegetative treatments on lands suitable for timber production.

g. Range

Domestic livestock grazing levels increase slightly from existing levels as a result of the emphasis to manage only cost-efficient allotments, riparian area management, and management of elk winter range.

h. Timber

The objective is to assign most lands of moderate or higher site quality to timber production, maintaining or increasing current sell levels. Timber harvest levels are higher than the volume currently offered and includes increased emphasis on salvage and utilization of smaller material. Harvest levels increase over time in this alternative.

The first decade allowable sale quantity schedule of 107 MMBF/year is 4 percent below the current direction (Alternative a). Outputs then increase to about 131 MMBF/year in the 2nd decade and 177 MMBF in the 11th decade which approximates long-term sustained yield capacity.

Clearcut, shelterwood, and selection harvest are 30, 61, and 9 percent respectively, of the acreage harvested in early decades.

i. Minerals

In comparison to the existing situation, there is a decrease in acres with high mineral occurrence potential assigned to roadless management. Oil and gas leasing and development is acceptable and special stipulations are recommended to protect important surface resource values and sensitive areas.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

The Proposed Action will increase the miles of open access roads over the existing situation, but the network of open roads is distributed in a way to reduce impacts on elk summer range, grizzly bear habitat, and riparian areas.

Approximately 3,852 collector miles and 7,257 local miles are needed for management. Approximately 5,020 of these needed miles exist. About 1,883 collector miles remain open for public use in this alternative, while local roads will generally be closed.

k. Fire

Man-caused fire risk increases due to greater public use of roads. Effective suppression actions are required to protect life and property where those values dictate.

l. Socioeconomic

Moderate opportunities exist for economic expansion and gains in employment. Timber harvest activities are the principal reasons for increasing employment, with minor increases attributable to recreation opportunities.

m. Variations on the Proposed Action (Alternative d)

NFMA Regulations (36 CFR 219.16(a)(3)(i)) require that under certain conditions, an alternative with harvest schedules which depart from the base sale schedule will be formulated.

Alternative d1

This departure includes acceleration of timber harvest in the first decade to contribute to the national need for lumber used in housing. The first decade is similiar to the Proposed Action (Alternative d), then projections increase to its peak in the fourth decade. Even flow is reached at the 10th decade. This departure would contribute toward a moderately increasing community economy through coordinated timber flow from private and Federal lands while responding to a moderate increase in future demand for wood products.

Analysis - Elk forage production and populations would average 25 percent less than Alternative d during the first and last one and one-half decades, for a total of 30 years. The intervening decades would have a higher forage production than the Proposed Action (Alternative d).

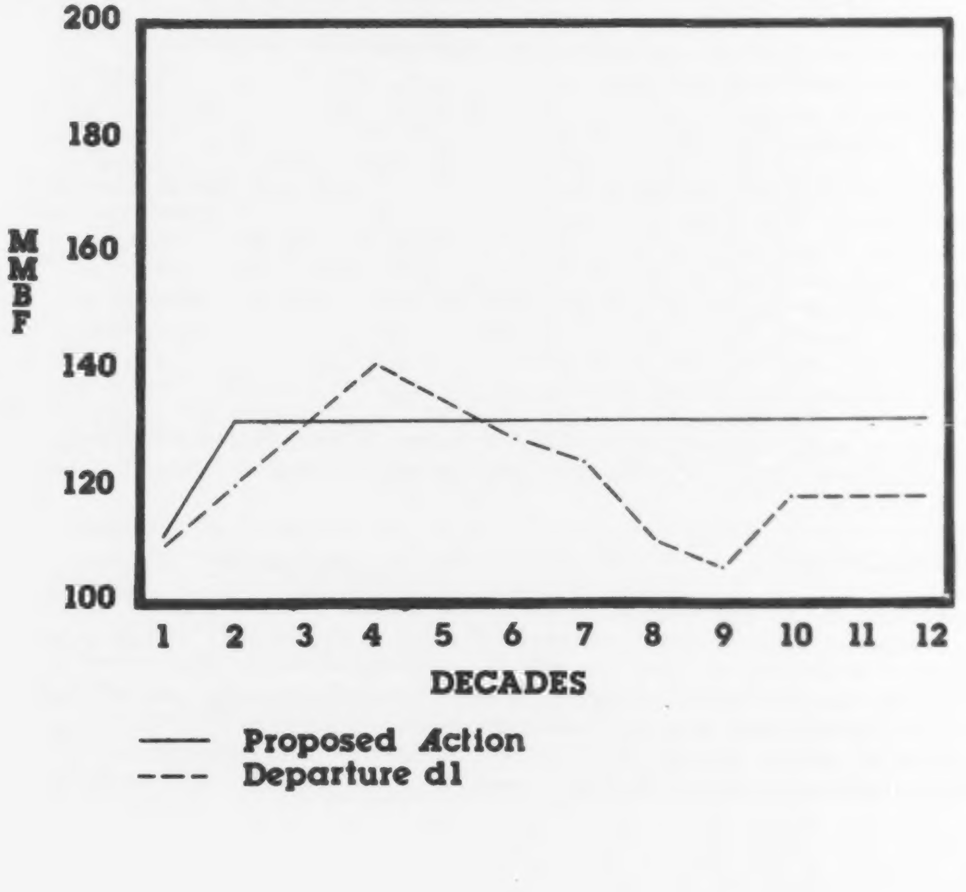
Water yield would increase approximately 1 percent above the Proposed Action for decades four through six and could result in stream channel stability problems in isolated cases. Long-term effects beyond the eighth decade will be similar to those of the Proposed Action (Alternative d).

Road costs are similar to the Proposed Action (Alternative d) and the total budget requirements are slightly higher. The Present Net Value is $174,714,000.

Summary of the departure on the Proposed Action (Alternative d) - The variation on the Proposed Action (Alternative d), while administratively feasible, is not being selected for implementation at this time because of adverse short- and long-term environmental effects and the accelerated capital investment required for roads. The Proposed Action (Alternative d) is at or near the margin of acceptability in several of the resource or social/economic elements: water, soils, wildlife, fish, and community stability. Under the departure schedules, hydrologic impacts would result in, or accelerate, unacceptable stream channel changes, water quality reductions, and soil displacement. Wildlife and fish habitat and populations would be reduced from current or expected levels under the Proposed Action (Alternative d). A significant departure below the base sale schedule of the Proposed Action (Alternative d), beyond decade seven, may result in an unacceptable impact on community stability by exaggerating the dependency of local mills on timber supplies from private lands.

Figure II.-3 -

Allowable Sale Quantity - Proposed Action and Departure



5. Alternative e

This alternative was designed to emphasize timber outputs and livestock use to be achieved in the most cost-effective manner, and does not respond to the wilderness issue. It results in an extensive road system, encouraging opportunities for minerals exploration, development, and roaded recreation. This alternative is useful in evaluating the total range of tradeoffs.

Alternative e emphasizes a high level of intensive timber management, increasing the existing volume sold, to maintain an even flow of sawtimber, intermediate, and small-size products. Motorized dispersed recreation opportunities are encouraged, with a low level of construction for developed recreation. A complete Forest road network will be developed to provide for resource access, forest product utilization, and recreation. Forest road closures will be limited to critical big-game habitat areas. Big-game habitat will be managed to optimize deer and elk numbers as they are considered a commodity in this alternative. Livestock grazing is encouraged on National Forest System lands. Modification of some visually sensitive areas seen from major trails and roadways is allowed, although the natural-appearing landscape is generally retained for most travelers in and adjacent to the Forest.

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, no additional wilderness is recommended in this alternative, with 39 percent assigned to roadless management and approximately 61 percent available for development.

b. Recreation and Trails

Primitive and semiprimitive dispersed recreation opportunities would be reduced. The lower provision for roadless area management is made in order to maintain a high timber management program. There are more opportunities for motorized dispersed recreation. Developed recreation needs are met by maintaining facilities at destination areas.

c. Wilderness

The Forest has approximately 139,708 acres of designated wilderness. No additional acres are recommended for wilderness in this alternative.

d. Visual Quality

Modification of some visually sensitive areas seen from major trails and roadways is allowed. Management activities, mostly timber harvest and roading, will be allowed to dominate many landscapes outside of existing wilderness. Some unroaded areas not suitable for timber production, about 184,000 acres, would not be roaded or harvested unless accessed for other reasons such as mineral exploration and development.

e. Fish and Wildlife

Elk habitat productivity decreases on both winter and summer ranges by approximately 25 percent from the existing situation, with elk numbers down as well. Forage values are low and the driveable road density is high with few restrictions. Land available for maintaining old-growth dependent species is the lowest of any alternative. Essential habitat for grizzly bear will be well protected both by roadless types of management which minimize human-caused mortality, and intensive grizzly bear habitat management which emphasizes habitat enhancement. In addition, occupied areas outside of essential habitat (Management Situation 2) will be managed to prevent grizzly bear mortality. This will be done with Forest policy and by the use of restrictive clauses applied to Forest user contracts.

Aquatic environment values are enhanced as a result of applying management prescriptions which protect the riparian zone, and through structural stream improvements.

f. Water and Soils

Water yield will increase and stream channels which are subject to disturbance increase.

g. Range

Potential livestock forage production increases as a result of a higher level of timber management activities. Structural range improvements will be required to provide opportunities for utilization of the forage and also provide the constraints on livestock use necessary to provide for big-game use.

h. Timber

The objective is to emphasize timber outputs. Land suitable for timber production is greater than most other alternatives. The first decade allowable sale quantity of 107 MMBF/year is 4 percent below the current direction (Alternative a). Projected outputs then gradually increase to an allowable sale of 140 MMBF/year in the 2nd decade, 140 in the 10th decade, and 191 in the 11th decade which approximates long-term sustained yield capacity.

Clearcut, shelterwood, and selection harvest systems are 33, 59, and 8 percent respectively, of the acreage harvested in the early decades.

i. Minerals

Due to the high development emphasis, this alternative has the fewest acres of high mineral potential in roadless area management. Therefore, more such acres will be readily accessible for prospecting. All oil and gas lease applications will be recommended for approval with only those special stipulations imposed which are necessary to protect big-game habitat, grizzly bear habitat, and timber production areas. Demand for mineral materials will increase to support road construction for the timber sale program.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

Road construction levels increase, resulting in an extensive roading system. The miles of collector roads open for public use are about the same as the moderate timber output alternatives. This alternative has fewer access restrictions than other alternatives, but closures and restrictions are effected for management of big-game and grizzly bear habitat.

Approximately 4,371 collector miles and 7,217 local miles are needed for management. Approximately 5,020 of these needed miles exist. About 1,584 collector miles remain open for public use, while local roads will generally be closed.

k. Fire

A high use of prescribed fire is required in this alternative to reduce logging slash buildup, prepare sites for regeneration, and to enhance big-game winter range values. Aggressive suppression action is required to offset the high flammability levels associated with logging slash.

l. Socioeconomic

As a result of timber management activities, this alternative produces a relatively high level of economic growth and employment opportunities based on the lowest total budget required to implement the alternative. It also reflects the highest present net value of any of the alternatives. Increased jobs and income are derived directly through the role of the timber industry and the indirect roles of related enterprise such as commercial trade and service industries.

6. Alternative f

This alternative was designed to emphasize nonmarket uses, especially wilderness, roadless recreation, and wildlife diversity and aquatic habitat. Timber management is confined to sites that do not have soils, wildlife, or in most cases, visual constraints. Retention and Partial Retention Visual Quality Objectives are maintained in most areas that are visually sensitive, including Forest trails. Habitat is provided for viable populations of old-growth dependent species in most major drainages on the Forest. Riparian areas support water, fish and wildlife habitat, recreation, and visual objectives. Roadless, undeveloped parts of the Forest contribute to wildlife habitat and recreational objectives. Off-road and over-snow vehicle use is confined to areas with open roads and trails with minimal potential for soil, vegetation, and watershed damage, and minimal potential for conflicts with other users.

This alternative was also developed to include roadless areas with particular public interest for wilderness, to provide for geographical distribution of wilderness areas across the Forest, and provide for representation of major ecosystems found on the Lolo.

Labor-intensive practices and activities are emphasized. Management efficiency is measured in terms of total resource costs and benefits rather than just dollars and benefits.

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, 51 percent is recommended for additional wilderness in this alternative, with 10 percent assigned to roadless management, and approximately 39 percent available for development.

b. Recreation and Trails

Nonmotorized dispersed recreation opportunities, with little recreation development, would be emphasized, with motorized access limited to roads in major drainages and to the principal road in some drainages. Off-road and over-snow vehicle use would be confined to areas with open roads and trails with minimal potential for soil, vegetation, and watershed damage, and minimal potential for conflicts with other users.

c. Wilderness

The Forest has approximately 139,708 acres of designated wilderness. An additional 399,699 acres are recommended for wilderness including portions or all of the Hoodoo, Bear-Marshall-Scapegoat-Swan, Marshall Peak, Cube Iron-Silcox, Cherry Peak, Sheep Mountain-State Line, Lolo Creek, Quigg Peak, and Stony Mountain roadless areas. (See Appendix C.)

d. Visual Quality

The natural-appearing landscape is retained for most travelers in and adjacent to the Forest. The number of visually sensitive areas on the Forest where the appearance of the landscape is obviously modified by management practices is minimal.

e. Fish and Wildlife

Essential habitat is managed for the grizzly bear which provides for habitat improvement and reduces impacts from human activities on the bear. Old-growth habitat will provide for viable populations of dependent species in most major drainages. Snags and snag replacements will be retained to the extent practical. Winter forage production decreases because vegetative manipulation is limited in additional areas recommended for wilderness.

Aquatic environment values are enhanced as a result of applying management prescriptions that protect the riparian zone, through mitigating structural stream improvements, and as a result of nondisturbance in additional wilderness and roadless areas.

f. Water and Soils

Water yield increases somewhat, as does the potential for sediment production. These increases are a result of the design and location of roads and vegetative treatments on lands suitable for timber production.

g. Range

Livestock grazing is confined to areas with minimal potential for wildlife and recreation conflicts and water quality impacts. Grazing levels increase slightly from existing levels as a result of the emphasis to manage only cost-efficient allotments, riparian area management, and management of remaining winter ranges where vegetative manipulation can occur outside wilderness areas.

h. Timber

The objective is to maintain timber production consistent with emphasis on nonmarket values. Timber management is encouraged on the most productive sites that are presently developed and on some presently unroaded areas. This alternative displays the lowest long-term sustained yield capacity.

The first decade allowable sale quantity of 107 MMBF/year is 4 percent below the current direction (Alternative a). Projected outputs then gradually increase to an allowable sale quantity of 129 MMBF/year in the 3rd decade and 171 MMBF in the 11th decade which approximates long-term sustained yield capacity. Clearcut, shelterwood, and selection harvest are 41, 48, and 11 percent respectively, of the acreage harvest in early decades.

i. Minerals

Minerals activities, especially prospecting, will be more costly due to a lower level of open access roads and a high amount of undeveloped and wilderness areas. Oil and gas lease applications are acceptable with special stipulations recommended to protect important surface resource values and sensitive areas.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

Approximately 3,727 collector miles and 7,136 local miles are needed for management. Approximately 5,020 of these needed miles exist. About 1,425 collector miles remain open for public use, while local roads will generally be closed.

k. Fire

Lightning-caused fires are allowed to burn under certain conditions to promote vegetative diversity and enhance wildlife habitat. Effective suppression actions are required to protect life and property.

l. Socioeconomic

Moderate opportunities exist for economic expansion and employment. Timber harvest activities are the principal reasons for increasing employment, although some minor increases are attributable to recreation opportunities.

7. Alternative g

This alternative was designed to maintain or increase market outputs from currently roaded lands and respond to nonmarket issues on roadless areas. All inventoried roadless acreage remains unroaded and recommended for wilderness. Timber management is confined to presently developed sites, displaying the least acreage available for timber harvest of all the alternatives. These developed areas represent actual and potential products, and the goal of management should be to maintain productivity by emphasizing management of the resource for which a given part of the Forest is best suited.

a. Roadless Area

Of the 776,190 currently roadless acres on the Forest, 100 percent is recommended for additional wilderness.

b. Recreation

Nonmotorized dispersed recreation opportunities with little recreation development is emphasized with motorized access limited to roads in major drainages. Off-road and over-snow vehicle use is confined to areas with open roads and trails.

c. Wilderness

The Forest has approximately 142,052 acres of designated wilderness. An additional 776,190 acres are recommended for wilderness in this alternative including all the inventoried roadless areas on the Forest. (See Appendix C.)

d. Visual Quality

A high level of visual quality is maintained adjacent to residential areas and a moderate level in the foreground viewed from existing and potentially major travel corridors. Management activities are evident on developed lands, with timber harvest patterns and associated access roads seen on the landscape.

e. Fish and Wildlife

All unroaded big-game security areas remain unroaded. However, productivity and population numbers decrease because vegetative manipulation is prohibited in recommended wilderness areas. Lands available for maintenance of old-growth dependent species and diversity increases with recommended wilderness acreage. The large wilderness blocks will provide for grizzly bear recovery by minimizing human-caused mortality. Since grizzly bear habitat enhancement opportunities are minimized, actual recovery will be slow.

Aquatic environment disturbances will be at a relatively high level on developed lands due to constructed roads and emphasis on timber management activities. Riparian environments in roadless areas will be protected.

f. Water and Soils

Water yield and sediment production increase on developed lands, and in some cases, influence adjacent roadless lands.

g. Range

Domestic livestock forage production potential increases on developed lands as a result of increasing forage production on transitory range through timber harvest. On the Forest as a whole, forage production is the lowest of all alternatives.

h. Timber

The objective is to maintain a high level of timber production from currently roaded and developed lands. This alternative displays the lowest number of acres considered suitable for timber management of all the alternatives, but does not result in the lowest present net value nor long-term sustained yield capacity.

The first decade allowable sale quantity of 90 MMBF/year is 19 percent below the current direction (Alternative a). Projected outputs then increase to 120 MMBF/year in decade 2, 126 MMBF in the 10th decade, and 174 MMBF in the 11th decade, which approximates the long-term sustained yield capacity.

Clearcut, shelterwood, and selection harvest are 42, 56, and 2 percent respectively, of the acreage harvested in early decades.

i. Minerals

Mineral exploration and development opportunities outside of existing and recommended wilderness are maximized on the currently roaded portions of the Forest and very low on the remainder. This alternative has the highest level of lands with very high mineral potential in roadless management.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic environmental analysis. Special stipulations are used whenever the lease area has surface resource values needing special protection to meet the alternative management objectives.

j. Road System

Approximately 2,996 collector miles and 8,112 local miles are needed for management. Approximately 5,020 of these needed miles exist. About 1,750 collector miles remain open for public use, while local roads will generally be closed.

k. Fire

In some areas, prescribed burning and associated air pollution are at high levels due to intensive timber harvest and the need to eliminate slash and prepare sites for regeneration. An aggressive wildfire suppression program is supported on developed lands unless suppression costs exceed values at risk, such as where commercial timber values are low to nonexistent. Naturally-occurring fire in roadless areas is the principal means of providing for vegetative diversity and enhancing wildlife habitat. The reduced opportunity for access and prescribing fire on winter ranges and in grizzly bear habitat in roadless areas reduces wildlife productivity.

l. Socioeconomic

Very limited opportunities exist for economic growth and increased employment. While this alternative displays one of the higher Present Net Value figures, employment opportunities and payments to local counties decrease.

D. Comparison of Alternatives

The purpose of Forest planning is to select for implementation the alternative that most nearly maximizes net public benefits and responds to issues identified through the planning process. The discussion in this section focuses on how major resource outputs and economic effects vary among alternatives in an attempt to maximize net public benefits from different perspectives.

A summary of how each public issue is addressed is found in Table II-44 at the end of this chapter. Total resource production for each alternative and selected benchmarks are shown in Table II-44 and outputs that vary significantly among alternatives are described.

1. Recreation

a. Dispersed Recreation

Dispersed recreation outside wilderness occurs in roaded natural and semiprimitive, motorized, or nonmotorized (roadless) settings. The Lolo National Forest has a high level of dispersed recreation use. In Fiscal Year 1980, use of dispersed areas totaled approximately 1,113,500 RVD's or 80 percent of the total Forest recreation use.

A dispersed recreation analysis done on the Forest determined that at least 196,000 acres should be assigned to roadless area management in order to provide for Type II (semiprimitive, nonwilderness) recreation demands. Other dispersed-type recreation assignments do not need to be enhanced or constrained to provide for anticipated demands on the Lolo Forest. All alternatives are capable of supplying more dispersed recreation opportunities including wilderness than the forseable demand.

The mix of dispersed recreation types between alternatives will vary. (See Table II-44.) All alternatives provide different levels of opportunities for either primitive, motorized or nonmotorized dispersed recreation experiences. Alternatives with the largest amount of wilderness provide the highest level of opportunity for primitive recreation and alternatives with the most road development provide the highest level of motorized recreation. Alternatives c and e are most favorable to motorized recreation. Alternative b has the highest combined level of dispersed recreation overall. Table II-9 displays the dispersed recreation potential and the acres of recreation opportunity class by alternative.

Table II-9: Dispersed Recreation Potential and Recreation Opportunity Classes

	Alternatives							Benchmarks		
								MAX	MIN	RPA
	a	b	c	d	e	f	g	PNV	LEV	RPA
Dispersed Recreation Potential (MRVD's per year)	3627	3693	3522	2017	2028	1987	2238	1634	955	3204
Recreation Opportunity Class										
Wilderness/Roadless 1/										
- Acres (M)	352	352	352	363	140	539	916	130	345	342
- Percent	17	17	17	17	7	26	44	6	17	17

(Footnotes on next page.)

Table II-9 (continued)

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	MIN LEV	RPA RPA
Moderate Off-Road 2/										
- Acres (M)	165	379	145	181	300	77	21	95	375	228
- Percent	8	18	7	9	14	4	1	5	18	11
Limited Off-Road 3/										
- Acres (M)	1374	1160	1394	1347	1451	1275	954	1666	1171	1420
- Percent	66	56	67	65	70	61	46	80	56	63
Road Oriented 4/										
- Acres (M)	192	192	192	192	192	192	192	192	192	192
- Percent	9	9	9	9	9	9	9	9	9	9

1/ Wilderness/Roadless. Generally, 5 miles or greater to the nearest road. Recreation is limited to extended backpack or horseback trips. Low hunter density. Success would be measured in harvesting "trophy-sized" animals. Low fisherman density. Success would be measured in harvesting "trophy-sized" fish from seldom fished lakes. Excellent opportunities for viewing/photographing all species of wildlife. Trapping opportunities limited due to lack of access.

2/ Moderate Off-Road. Generally 1 to 5 miles to the nearest drivable road. Recreation is often centered around short backpack trips (2 to 3 days) or long 1-day trips. Low hunter density. Success would be measured in harvesting a legal animal. Low to moderate fisherman density. Success would be measured in harvesting high numbers of fish with the opportunity for an occasional "trophy." Good opportunities for viewing/photographing most wildlife. Higher people densities could make big game slightly less viewable (approachable). Good opportunities for trapping.

3/ Limited Off-Road. Generally less than a mile to the nearest drivable road. Recreation limited to day trips. Moderate hunter density. Success would be measured in harvesting a legal animal. Little or no opportunity for trophy animals. Moderate fishermen density. Success would be measured in high numbers of fish. Little opportunity for trophy-sized fish. Good opportunities for viewing/photographing nongame wildlife. Fair opportunities for viewing/photographing big game. Good opportunities for trapping.

4/ Road Oriented. Average distance between drivable roads less than one-half mile. A vehicle traveling along a road can often be heard or seen from the next road. Recreation limited to the zone viewable from the road (includes hunting, viewing, photographing). Streams generally paralleled by drivable roads. High hunter density. Success measured in harvesting a legal animal. High fishermen density. Success measured in catching a fish. Little or no opportunities for catching high numbers. Fair to poor opportunities for viewing/photographing wildlife. Poor opportunities for trapping due to low (harassment induced) populations.

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Table II-10 displays the anticipated dispersed recreation use by time period.

Table II-10: Dispersed Recreation Use by Time Period (MRVD's/Year)
All Alternatives

	Time Period	Dispersed Recreation
Plan Period	1982 - 1985	1,153
	1986 - 1990	1,204
Projections	1991 - 2000	1,283
	2001 - 2010	1,374
	2011 - 2020	1,478
	2021 - 2030	1,536

Big-game hunting comprises a significant portion of dispersed recreation. Big-game hunter numbers are expected to increase (Design for Tomorrow, 1985-1990, June 1985, in draft, Montana Department of Fish, Wildlife, and Parks). Big-game hunting opportunities have been predicted by alternative and are displayed in Table II-11. Two separate analyses were made to display hunting recreation opportunities. Potential big-game hunter recreation visitor days were calculated using Forest estimates for total recreation visitor days (RVD's) and multiplying by the percentage of dispersed recreation that hunting represents. Habitat effectiveness was calculated using a model developed by Montana Department of Fish, Wildlife, and Parks' personnel. This model assumes that hunting opportunities diminish as bull elk harvest rates increase. Since bull harvest rates are somewhat related to hiding cover rates and open road densities, cover percentages, and open road densities are used as the parameters for estimating hunter opportunities in this model. In both displays, alternatives which minimize development activities, such as Alternatives b and g, have the highest levels of hunting recreation.

Table II-11: Big Game Hunting Opportunities by Alternative

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	MIN LEV	RPA RUN
Potential big game hunter recreation visitor days (MRVD's)	275	430	271	309	238	255	326	151	217	322
Habitat effectiveness (represented as a decimal with 1.0 representing optimal conditions for hunting opportunity)	.72	.76	.72	.74	.72	.74	.78	.60/ .75*	.90/ .50*	.61/ .76*

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* Major fluctuations in timber harvest rates are projected to alter habitat effectiveness outputs by the third to fourth decades, hence the double figures. The first number represents decade 1, the second decade 5.

Table II-11 displays hunting opportunities over the entire Forest. As a means of assessing how hunting opportunities might be impacted on a drainage basis, an analysis was made for the Proposed Action which narratively addresses these relationships. This analysis, "Analysis of Impacts of Forest Plan Assignments on Montana Department of Fish, Wildlife, and Parks Hunting Districts," is in the planning records, and is available on request. This analysis will prove useful to individuals having an intimate knowledge of individual drainages on the Forest.

b. Developed Recreation

Developed recreation use includes activities at Forest Service recreation facilities as well as at private recreation facilities on National Forest System lands. The latter includes resorts, recreation residences, and developed ski areas. Developed National Forest sites received approximately 205,300 RVD's in Fiscal Year 1980. This is about 15 percent of the Forest's total recreation use. Use of private facilities on National Forest System lands amounted to 70,900 RVD's or 5 percent of the total recreational use on the Forest during Fiscal Year 1980.

All of the alternatives are similar in that they do not provide for new campground or picnic area construction since the existing supply is adequate to meet expected demand. The Forest will concentrate on improving the existing sites to make them useable by a wider segment of society, including the elderly and handicapped. Additional facilities and increased site capacity can be provided by private concessionaires and nearby developers. All alternatives can meet projected use.

Table II-12 displays the anticipated developed recreation use by time period.

Table II-12: Developed Recreation Use by Time Period (MRVD's/Year)
All Alternatives

	Time Period	Developed Recreation
Plan Period	1982 - 1985	308
	1986 - 1990	388
Projections	1991 - 2000	393
	2001 - 2010	375
	2011 - 2020	386
	2021 - 2030	405

2. Wilderness, Recommended Wilderness, and Roadless Areas

The 142,052 acres of designated wilderness will be maintained in all alternatives. All alternatives except e include recommendations for additional wilderness. Table II-13 shows assignment of roadless acres to wilderness under the various alternatives. The roadless area evaluation that includes wilderness suitability is found in Appendix C to this document.

The RARE II inventory of 1979 totaled 653,995 acres of National Forest roadless land on the Lolo Forest. This inventory was revised in 1983 as a result of the revised NFMA Regulations (36 CFR 219.17, September 1983) that required wilderness evaluation of roadless in Forest planning. The 1983 inventory reflected changes resulting from creation of the Rattlesnake National Recreation Area and Wilderness (RNRAW) by Congress, developments in some areas during the interim, and the addition of roadless acres from past unit plans that had not been included in the RARE II inventory. The 1983 inventory update resulted in a total of 776,190 acres. Table II-14 displays roadless inventory changes.

Of the 776,190 acres of currently inventoried roadless area on the Lolo Forest, Alternative g recommends all inventoried roadless land on the Forest for wilderness, while trying to maintain or increase market outputs from currently roaded lands. Alternative e does not recommend any additional roadless acres for wilderness. Alternative f manages approximately 52 percent of the roadless land as wilderness. In addition to wilderness recommendations for the Forest, Table II-15 shows the assignment of roadless lands to the various management emphasis prescriptions by alternatives. A summary of this emphasis is shown by categories of roadless, developed, and wilderness as well as by the first and fifth decade to indicate the rate of development.

Table II-13: Wilderness Allocation for Roadless Areas

Roadless Area	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	h MAX PNV	k Wilderness	l MIN LEV
McGregor-Thpson	-	-	-	-	-	-	27850	-	27850	-
L1LAQ										
%							100%		100%	
Maple Peak	-	-	-	-	-	-	16294	-	16294	-
01141										
Idaho Pan.	-	-	-	-	-	-	8434	-	8434	-
Kootenai	-	-	-	-	-	-	900	-	900	-
Lolo	-	-	-	-	-	-	6960	-	6960	-
%							100%		100%	
Stevens Peak	-	-	-	-	-	-	4970	-	4970	-
01142										
Idaho Pan.	-	-	-	-	-	-	4370	-	4370	-
Lolo	-	-	-	-	-	-	600	-	600	-
%							100%		100%	
Wonderful Peak	-	-	-	-	-	-	6670	-	6670	-
01152										
Idaho Pan.	-	-	-	-	-	-	5070	-	5070	-
Lolo	-	-	-	-	-	-	1600	-	1600	-
%							100%		100%	
Petty Mountain	-	-	-	-	-	-	16980	-	16980	-
X1202										
%							100%		100%	-
Rattlesnake	-	-	-	-	-	-	2700	-	2700	-
X1204										
%							100%		100%	
Reservation De.	-	-	-	-	-	-	16300	-	16300	-
X1205										
%							100%		100%	
Baldy Mtn.	-	-	-	-	-	-	6680	-	6680	-
X1209										
%							100%		100%	
Ward Eagle	-	-	-	-	-	-	8570	-	8570	-
X1220										
%							100%		100%	

Table II-13: Wilderness Allocation for Roadless Areas (con't)

	Alternatives							Benchmarks		
								h	k	l
Roadless Area	a	b	c	d	e	f	g	MAX PNV	Wilderness	MIN LEV
Hoodoo 01301	181950	219450	145750	181950	-	230300	247647	-	247647	-
Clearwater	100100	137600	63900	100100	-	131800	149147	-	149147	-
Lolo	81850	81850	81850	89530	-	98500	98500	-	98500	-
%	73%	89%	59%	77%		93%	100%	-	100%	-
Med Ck Up N. 01302	-	-	-	-	-	6100	54002	-	54002	-
Clearwater	-	-	-	-	-	-	40702	-	40702	-
Idaho Pan.	-	-	-	-	-	6100	6100	-	6100	-
Lolo	-	-	-	-	-	-	7200	-	7200	-
%						11%	100%		100%	
Silver King 01424	-	-	-	-	-	-	54287	-	54287	-
Deerlodge	-	-	-	-	-	-	41447	-	41447	-
Lolo	-	-	-	-	-	-	12840	-	12840	-
%							100%		100%	
Bear-Mar-S-Sw 01485	139769	367012	266561	164948	29505	583149	717156	-	865178	-
Flathead										
Midd. Fk.	-	-	-	-	-	34746	42450	-	42450	-
East Side	-	-	-	5187	-	57640	57640	-	57640	-
Swan Crest	-	60826	60826	-	-	60826	106870	-	106870	-
Swan Front	-	82417	82426	43667	-	111412	141990	-	141990	-
Helena										
Stone. Mtn.	-	-	-	-	-	51485	51485	-	51485	-
Silver King	7215	7215	7215	-	7215	7215	7215	-	7215	-
Lewis&Clark										
Badg./Two Med.	-	-	-	-	-	-	-	-	102100	-
Teton	-	39845	5040	5040	-	63133	63133	-	63133	-
Deep Ck.	-	-	-	-	-	-	-	-	45922	-
Renshaw	31304	45864	19144	19144	21880	57591	57591	-	57591	-
Benchmark	-	26027	3630	3630	-	32314	32314	-	32314	-
Silver K.	32000	35568	19030	19030	410	35568	35568	-	35568	-
Lolo										
Swan Front	3690	3690	3690	3690	-	3690	20840	-	20840	-
Monture	65560	65560	65560	65560	-	67529	100060	-	100060	-
%	16%	42%	31%	19%	3%	67%	83%		100%	
Cataract 01665	-	17700	-	-	-	12300	27600	-	27600	-
Kootenai	-	17700	-	-	-	12300	17700	-	17700	-
Lolo	-	-	-	-	-	-	9900	-	9900	-
%		64%				45%	100%		100%	

Table II-13: Wilderness Allocation for Roadless Areas (con't)

Roadless Area	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	hx MAX PNV	k Wilderness	l MIN LEV
Marshall Pk.	-	-	-	-	-	4000	9400	-	9400	-
01781										
%						43%	100%		100%	
Cube-Iron	-	-	-	-	-	38100	38100	-	38100	-
01784										
Kootenai	-	-	-	-	-	400	400	-	400	-
Lolo	-	-	-	-	-	37700	37700	-	37700	-
%						100%	100%	-	100%	
Sundance Rdg.	-	-	-	-	-	-	7220	-	7220	-
01785										
%							100%	-	100%	
Tepee-Sp. Ck.	-	-	-	-	-	-	14890	-	14890	-
X1786										
%							100%		100%	
Mount Bushnell	-	-	-	-	-	-	43070	-	43070	-
01790										
%							100%		100%	
Cherry Peak	-	-	-	-	-	39640	39640	-	39640	-
01791										
%						100%	100%		100%	
Gilt-Edge S. Ck.	-	-	-	-	-	-	11500	-	11500	-
01792										
Idaho Pan.	-	-	-	-	-	-	300	-	300	-
Lolo	-	-	-	-	-	-	11200	-	11200	-
%							100%		100%	
Pat. Knob-S. C.	-	-	-	-	-	-	17200	-	17200	-
01794										
%							100%		100%	
S.Siegel-S. C.	-	-	-	-	-	-	14800	-	14800	-
01795										
%							100%		100%	
North Siegel	-	-	-	-	-	-	10000	-	10000	-
01796										
%							100%		100%	

Table II-13: Wilderness Allocation for Roadless Areas (con't)

Roadless Area	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	h MAX PNV	k Wilderness	l MIN LEV
Marble Point	-	-	-	-	-	-	13210	-	13210	-
01798										
%							100%		100%	
Sheep Mtn.-S. L.	-	-	-	-	-	62820	67479	-	67479	-
01799										
Idaho Pan.	-	25700	-	-	-	25700	26979		26979	-
Lolo	-	-	-	-	-	37120	40500	-	40500	-
%		38%				93%	100%		100%	
Stark Mtn.	-	-	-	-	-	-	14140	-	14140	-
01800										
%							100%		100%	
Burdette	-	-	-	-	-	-	16360	-	16360	-
01803										
%							100%		100%	
Lolo Creek	-	-	-	15347	-	15347	15347	-	15347	-
01805										
Bitterroot	-	-	-	-	-	-	587	-	587	-
Clearwater	-	-	-	-	-	-	100	-	100	-
Lolo				3990		14660	14660	-	14660	-
%				26%		96%	100%	-	100%	-
Welcome Ck.	-	-	-	-	-	1100	1100	-	1100	-
01806										
%						100%	100%		100%	
Quigg	60830	60830	60830	60830	-	60830	81985	-	81985	-
01807										
Deerlodge	-	-	-	-	-	-	12165	-	12165	-
Lolo	60830	60830	60830	60830	-	60830	69820	-	69820	-
%	74%	74%	74%	74%		74%	100%		100%	
Stony Mtn.	-	61816	-	-	-	82827	102846	-	102846	-
01808										
Bitterroot	-	37200	-	-	-	23281	43300	-	43300	-
Deerlodge	-	24616	-	-	-	24616	24616	-	24616	-
Lolo	-	-	-	-	-	34930	34930	-	34930	-
%		60%				81%	100%		100%	
Garden Point	-	-	-	-	-	-	6500	-	6500	-
01809										
%							100%		100%	

Table II-13: Wilderness Allocation for Roadless Areas (con't)

Roadless Area	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	h MAX PNV	k Wilderness	l MIN LEV
Evans Gulch X1811	-	-	-	-	-	-	8830	-	8830	-
%							100%		100%	
Clear Ck. X1812	-	-	-	-	-	-	5470	-	5470	-
%							100%		100%	
Deep Ck. X1814	-	-	-	-	-	-	7970	-	7970	-
%							100%		100%	
TOTAL Lolo Forest	211930	211930	211930	223600	-	399699	776190	-	776190	-
Contiguous	170619	540578	261211	195798	29505	736814	978573	-	1126595	-
GRAND TOTAL	382549	752508	473141	419398	29505	1136513	1754763	-	1902785	-
%	20%	40%	25%	22%	2%	60%	92%		100%	

Table II-14: Adjustments to the Roadless Inventory

Area Code	Roadless Name	Gross Acres	Net Acres	Change in Gross	Change in Net	Reason	Revised Gross	Revised Net
L1LAQ	McGregor-Thompson	76000	54000	-45700	-26150	Roads and Timber Sales	30300	27850
01141	Maple Peak	0	0	+6960	+6960	Addition of Roadless	6960	6960
01142	Stevens Peak	700	600	0	0		700	600
01152	Wonderful Peak	1600	1600	0	0		1600	1600
X1202	Petty Mountain	0	0	+16980	+16980	Addn of Rdless/Unit Plans	16980	16980
X1204	Rattlesnake	0	0	+3310	+2700	Addn of Rdless/Unit Plans	3310	2700
X1205	Reservation Divide	0	0	+16300	+16300	Addn of Rdless/Unit Plans	16300	16300
X1209	Baldy Mtn.	0	0	+6680	+6680	Addn of Rdless/Unit Plans	6680	6680
X1220	Ward Eagle	0	0	+8570	+8570	Addn of Rdless/Unit Plans	8570	8570
01301	Hoodoo	105560	105300	-6880	-6800	Ac. Recal.& Bdy.Correction	98680	98500
01302	Meadow Ck.- U.N.	7200	7200	0	0		7200	7200
01424	Silver King	13500	13100	-350	-260	Ac. Recal. & BPA	13150	12840
01485	Bear-Ma-So-Swan	123075	122175	-1135	-1275	Acre Recalculation	121940	120900
01665	Cataract	9900	9900	0	0		9900	9900
01781	Marshall Peak	9400	9400	0	0		9400	9400
01784	Cube-Iron	40400	38900	-1200	-1200	Roads and Timber Sales	39200	37700
01785	Sundance Ridge	11800	9100	-2510	-2490	Rds, Tim Sale & Ac Recal	9440	7220
X1786	Teepee-Spring Ck.	0	0	+15250	+14890	Addn of Rdless/Unit Plans	15250	14890
01790	Mount Bushnell	44330	44330	-1260	-1260	Rds, Tim Sale & BPA	43070	43070
01791	Cherry Peak	49120	48960	-9320	-9320	Rds, Tim Sale & Ac Recal	39800	39640
01792	Gilt Edge-Silver Ck	11200	11200	0	0		11200	11200
01794	Pat Knob-N Cutoff	25800	24200	-7000	-7000	Roads and Timber Sale	18800	17200
01795	S Siegel-S Cutoff	19100	17600	-3500	-2800	BPA	15600	14800
01796	North Siegel	10200	10000	0	0		10200	10000
01798	Marble Point	15000	15000	-1790	-1790	Existing Road	13210	13210
01799	Sheep Mtn-State Li	40700	40500	0	0		40700	40500
01800	Stark Mtn.	22380	22380	-8240	-8240	Rds,Tim Sa,BPA & Ac Recal	14140	14140
01803	Burdette	15500	15400	+880	+960	Acre Recalculation	16380	16360
01805	Lolo Creek	16400	14900	-240	-240	Roads and Timber Sale	16160	14660
01806	Welcome Creek	1100	1100	0	0		1100	1100
01807	Quigg	68200	68200	+1620	+1620	Acre Recalcula' ion	69820	69820
01808	Stony Mtn.	33120	33120	+1810	+1810	Acre Recalculation	34930	34930
01809	Garden Point	6900	6500	0	0		6900	6500
X1811	Evans Gulch	0	0	+8830	+8830	Addn of Rdless/Unit Plans	8830	8830
X1812	Clear Creek	0	0	+5470	+5470	Addn of Rdless/Unit Plans	5470	5470
X1814	Deep Creek	0	0	+8170	+7970	Addn of Rdless/Unit Plans	8170	7970
	TOTAL	778,185	744,665	11,705	30,915		790040	776190

Table II-15: Management Emphasis by Alternative for Lolo Roadless Areas

Management Emphasis	Alternatives a	b	c	d	e	f	g
NONWILDERNESS							
Contiguous Rdless area							
Idaho Panhandle	51253	25553	51253	51253	25553	18174	-- --
Kootenai	19000	1300	19000	19000	19000	6700	-- --
Clearwater	89800	52300	126000	89800	189900	58000	
Flathead	348950	205707	205698	300096	348950	84326	-- --
Helena	51485	51485	51485	51485	51485	-- --	-- --
Lewis & Clark	243324	189324	289784	289784	314338	148022	148022
Bitterroot	43900	6700	43900	43900	43900	20000	-- --
Deerlodge	78228	53612	78228	78228	78228	53532	-- --
Lolo							
Timber/Range	61981	45497	307187	152908	213375	126447	-- --
Wild life							
Grizzly Bear	26445	27267	34325	23928	29451	11922	-- --
Other	119073	17318	43846	93712	94315	77384	-- --
Visual	152301	72206	15515	38217	38217	26706	-- --
Riparian	#	#	#	19711	19711	11090	-- --
Roadless*	168947	391313	113210	159578	295203	63568	-- --
Miscellaneous	35513	10660	50177	64536	85918	59374	-- --
WILDERNESS							
Lolo	211930	211930	211930	223600	-- --	399699	776190
Idaho Panhandle	-- --	25700	-- --	-- --	25700	33079	51253
Kootenai	-- --	17700	-- --	-- --	-- --	12300	19000
Clearwater	100100	137600	63900	100100	-- --	131900	189900
Flathead	-- --	143243	143252	48854	-- --	264624	348950
Helena	7215	7215	7215	-- --	7215	58700	58700
Lewis & Clark	63304	147304	46844	46844	22290	188606	188606
Bitterroot	-- --	37200	-- --	-- --	-- --	23900	43900
Deerlodge	-- --	24616	-- --	-- --	-- --	24616	78228

Table II-15 (Continued)

Management Emphasis	a	b	c	d	e	f	g
Summary of Management Emphasis							
Nonwilderness - Lolo Forest							
	a	b	c	d	e	f	g
Developed							
Decade 1	121484	89386	143321	142864	142864	126500	-- --
Decade 5 (projection)	395314	172947	451050	393012	480987	312923	-- --
Roadless							
Decade 1	442776	474874	420939	421696	633626	250291	-- --
Decade 5 (projection)	168947	391313	113210	171248	295203	63568	-- --
Nonwilderness - Contiguous roadless area							
Idaho Panhandle	51253	25553	51253	51253	25553	18174	-- --
Kootenai	19000	1300	19000	19000	19000	6700	-- --
Clearwater	89800	52300	12600	89800	189900	58000	-- --
Flathead	348950	205707	205698	300096	348950	84326	-- --
Helena	51485	51485	51485	58700	51485	-- --	-- --
Lewis & Clark	273324	189324	289784	289784	314338	148022	148022
Bitterroot	43900	6700	43900	43900	43900	20000	-- --
Deerlodge	78228	53612	78228	78228	78228	53532	-- --
Wilderness							
Lolo	211930	211930	211930	223600	-- --	399699	776190
Idaho Panhandle	-- --	25700	-- --	-- --	25700	33079	51253
Kootenai	-- --	17700	-- --	-- --	-- --	12300	19000
Clearwater	100100	137600	63900	100100	-- --	131900	189900
Flathead	-- --	143243	143252	48854	-- --	264624	348950
Helena	7215	7215	7215	-- --	7215	58700	58700
Lewis & Clark	63304	147304	46884	46844	22290	188606	188606
Bitterroot	-- --	37200	-- --	-- --	-- --	23900	43900
Deerlodge	-- --	24616	-- --	-- --	-- --	24616	78228
TOTAL ACRES LOLO FOREST	776190	776190	776190	776190	776190	776190	776190

Table II-15 (Continued)

Management Emphasis	a	b	c	d	e	f	g
	Alternatives						
TOTAL ACRES CONTIGUOUS AREAS							
Idaho Panhandle	51253	51253	51253	51253	51253	51253	51253
Kootenai	19000	19000	19000	19000	19000	19000	19000
Clearwater	189900	189900	189900	189900	189900	189900	189900
Flathead	348950	348950	348950	348950	348950	348950	348950
Helena	58700	58700	58700	58700	58700	58700	58700
Lewis & Clark	336628	336628	336628	336628	336628	336628	336628
Bitterroot	43900	43900	43900	43900	43900	43900	43900
Deerlodge	78228	78228	78228	78228	78228	78228	78228
GRAND TOTAL	1902749	1902749	1902749	1902749	1902749	1902749	1902749

#Riparian areas included in other management emphases in these alternatives.

*Does not include newly acquired land in the Rattlesnake National Recreation Area

3. Visual Quality

Visual quality objectives are standards to which proposed changes in the character of the landscape can be compared to determine the acceptability of change. The Preservation objective is applied to wilderness and other special areas where the natural landscape should be unaltered by forest management activities. The Retention objective is applied to areas where activities should not be evident to the casual Forest visitor, and Partial Retention to areas where activities may be evident but must remain subordinate to the natural landscape. Modification is applied to less visually sensitive areas where changes can dominate the natural landscape but borrow from the visual characteristics of the surrounding landscape and appear as a natural occurrence. Maximum Modification is applied to the least sensitive landscapes where changes can dominate the landscape but should appear as natural occurrences when viewed as background.

Visual resources can be enhanced or restored through vegetative treatment or they can be maintained through retention of natural landscapes in visually sensitive areas. The amount of vegetative treatment varies by alternative, which in turn affects the visual resource.

Visual quality objectives have been inventoried and mapped for the Forest according to the procedure described in National Forest Landscape Management (USDA Forest Service, 1974).

Alternatives a and b offer the highest levels of visual quality, requiring management activities such as logging and roads to remain visually subordinate to the characteristic landscape on about 90 percent of the area seen from viewpoints used in the visual resource inventory. Scenic quality for fishermen is the highest with these alternatives, although more riparian area road construction would be allowed in Alternative a, reducing visual quality more than in Alternative b.

Alternatives d and f maintain the visual quality on 71 percent and 73 percent of the areas seen from inventoried viewpoints, dropping the less travelled road, trail, and recreation use area viewpoints. Except where the landscapes are distinctive, background views that include timber management may be dominated by management activities. Alternative f, with its emphasis on wilderness reduces the number of acres assigned to Retention or Partial Retention, but actually increases the number of acres that will meet Retention and Partial Retention by placing them into the more restrictive VQO of Preservation which is assigned to Wilderness. Scenic quality for fishing outside wilderness and roadless areas is reduced in Alternatives d and f on all but the major streams and rivers, except where streams are adjacent to highly travelled roads assigned Retention or Partial Retention.

Alternative c maintains 57 percent of the area inventoried as visually sensitive. Outside of wilderness and roadless areas, these sensitive areas are limited to those seen from Interstate 90 and Montana State highways. Fishing areas not seen from these viewpoints, as well as background views that include timber management, may become dominated by these activities.

Alternative g recognizes 56 percent of the area inventoried as visually sensitive. While maintaining nearly the same number of Retention and Partial Retention acres as Alternative c, it limits them to wilderness and areas seen from I-90. Landscapes viewed by fishermen outside of the wilderness or away from I-90 will become dominated by management activities.

Alternative e, in eliminating proposed wilderness, has the lowest level of visual quality, with 52% of the visually sensitive areas maintained.

Figure II-4a. Visual Quality - % of Inventoried Retention & Partial Retention Visual Quality Maintained

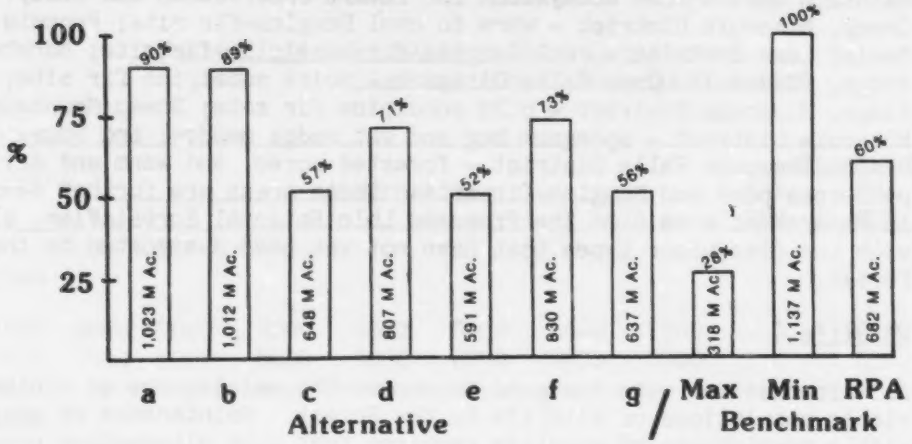
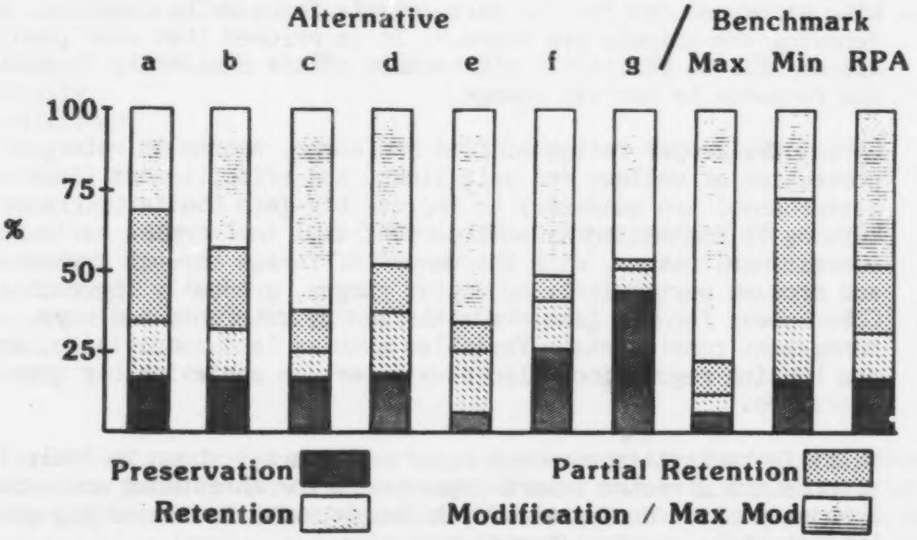


Figure II-4b. Visual Quality - % of Forest by Assigned Visual Quality Objectives



4. Research Natural Areas

The acreage recommended to Research Natural Area (RNA) management on the Forest is the same in all alternatives. Proposed Research Natural Areas on the Lolo Forest to meet Regional targets for examples of major forest ecosystems in western Montana. To date, six areas have been selected to maintain undisturbed ecosystems for future observation and study: Plant Creek, Missoula District - warm to cool Douglas-fir site; Pyramid Peak, Seeley Lake District - cool Douglas-fir subalpine fir site; Barktable Ridge, Plains/Thompson Falls District - moist subalpine fir site; Carlton Ridge, Missoula District - cold subalpine fir site; Sheep Mountain Bog, Missoula District - sphagnum bog and wet sedge meadow; and Squaw Creek, Plains/Thompson Falls District - forested scree, and warm and dry ponderosa pine and Douglas-fir site. These areas are further described in Management Area 6 of the Proposed Lolo National Forest Plan, along with the five minor types that have not yet been designated on the Lolo Forest.

5. Wildlife

All alternatives were designed to ensure the maintenance of minimum viable populations of wildlife on the Forest. Maintenance of minimum viable populations of wildlife requires that each alternative provide an acceptable low risk of species loss by assuring sufficient numbers of breeding adults. Habitat effectiveness, or freedom of wildlife from human disturbance is important if benefits from improved habitat diversity are to be realized. "Indicator" species will be monitored because they are sensitive to management activities or are of special concern, such as elk. Three groups encompassing these species are discussed below.

a. Big Game

Elk is the big-game species of greatest public interest on the Forest, with expressed desires for more animals for viewing, hunting, and just "knowing the animals are there." It is assumed that deer population trends will be similar to elk because of the similarity in habitats and response to habitat change.

Diversity, proper ratios of food and cover, access to water, protection of wallows and salt licks, and effectiveness (lack of disturbance) are necessary to improve big-game habitat. Prescribed burning is emphasized as an important tool to increase early forest successional stages, with the amount of forage through grasses, forbs, and browse, particularly on winter ranges, gradually increasing. Cover needs for big game are satisfied by watershed and road management constraints. Variables such as land subdivision, access, and hunting regulations also play a part in achieving big game increases.

Wildlife habitat improvement opportunities are shown in Table II-16. Efforts are directed toward improvement for threatened and endangered species habitat during the first decade, with increased big-game habitat improvements after that.

The winter forage resource, converted to potential number of elk on National Forest winter range in an average winter, varies by amount of timber harvest and assignment of forage to livestock. Table II-17 displays big-game winter and summer range productivity by alternative and resulting elk population potential.

Table II-16: Wildlife Habitat Improvement
(Average Annual Acre-Equivalents)

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Plan Period										
1982 - 1985	6000	5000	8000	8000	8000	8000	7700	0	10200	0
1986 - 1990	7500	6000	8000	8000	8000	8000	7700	0	8500	0
Projections										
1991 - 2000	8000	6000	0	8000	8000	8000	7700	0	6500	0
2001 - 2010	8000	6000	0	8000	8000	8000	7700	0	6300	0
2011 - 2020	8000	6000	0	8000	8000	8000	7700	0	6300	0
2021 - 2030	8000	6000	0	8000	8000	8000	7700	0	6300	0

Table II-17: Big Game (Elk) Productivity and Population Potential

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Winter Range Productivity (% of existing)	100	75	85	129	73	67	64	83	112	105
Summer Range Productivity (% of existing)	100	150	135	125	113	107	82	122	125	110
Net Habitat Productivity (% of existing)	100	80	90	125	78	72	69	88	119	105
Elk Population Potential (M number)	9.3	7.4	8.3	11.6	7.2	6.7	6.4	8.2	11.1	9.7

Opportunities for prescribed burning, cover enhancement, and scheduling of activities to avoid animal use periods allows Alternative d to have the highest level of net habitat productivity for big game (125 percent of existing levels) and potential animal numbers. Existing access will be restricted by closing one or more collector roads in a drainage where several roads exist, and closing most new collector roads to public use. All arterial roads will be open to public use. Most local roads will be closed after resource needs are met to lessen disturbance levels. A decline in habitat improvement accomplishments occurs in Alternatives c and e reflecting cost-efficiency considerations and high road construction and open road densities which create disturbances on both summer and winter ranges. Alternatives b, f, and g display declines in big-game population potential numbers and habitat productivity mostly due to limited opportunities for burning in roadless and wilderness areas and deemphasis on winter range management through some types of timber management. Table II-18 assesses the value of summer ranges located in inventoried roadless areas.

Table II-18: Summer Ranges Located within Inventoried Roadless Area Boundaries

1. Area provides very important summer range for big game
2. Area provides moderately important summer range for big game
3. Area has little or no value as big-game summer range

Roadless Area No.	Value for Summer Range	Roadless Area No.	Value for Summer Range
1141	1	1799	1
1142	1	1800	2
1152	1	1803	3
1301	1	1805	2
1302	1	1806	3
1424	2	1807	2
1485	2	1808	1
1665	2	1809	2
1781	2	1202	2
1784	1	1204	1
1785	2	1205	2
1786	3	1209	2
1790	1	1220	1
1791	1	1811	1
1792	1	1812	1
1794	3	1814	2
1795	2	LILAQ	2
1796	3	1146	1
1798	2	1810	1

(Table II-14 shows the roadless area names.)

b. Nongame Species

Since animals are a product of their environment, the maintenance of a diverse vegetative community results in a diverse community of wildlife species. Timber harvest, fire management, and roadless/wilderness management will maintain the distribution of timber age classes and thus maintain a diverse environment. As timber stands are harvested or die naturally, they regenerate and grow through various stages of development to become mature forests. As the forest stands change structure, the wildlife species inhabiting the stands change. When the total forest is considered, there will be an ever-changing mosiac of vegetative structures. Thus, most nongame needs will be met.

While roadless/wilderness management provides a large amount of the mature and old growth habitat for these dependent species, this group of nongame animals requires a different strategy for protection than other nongame species. Old growth species, represented by the pileated woodpecker or boreal owl, require very specific habitat conditions. They generally require low to mid elevation communities with disturbance-dependent tree species such as western larch or ponderosa pine. Wilderness or roadless management often occurs above the elevation where many of these tree species prevail, and the wilderness allocation prohibits man-caused disturbance to favor larch or ponderosa pine. Many old growth dependent wildlife species are not highly mobile, and since many wilderness areas are separated by long distances, gene pool isolation is a significant risk for these species.

As a strategy for meeting old growth needs, the Forest was segregated into 71 drainages. A minimum of 8 percent old growth was allocated to most of these drainages where wilderness was not available, although this varies to some degree by alternative (Table II-19). This old growth was then distributed by vegetative type within each drainage recognizing the individual needs of various old growth dependent species. While a diversity of vegetative types and age classes will be provided, old growth forests and dependent wildlife are most sensitive to land management activities.

Table II-19: Nongame Animal Diversity

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Land available in wilderness & roadless areas for old growth-dependent species (acres)	503,377	731,055	489,470	488,884	419,855	596,154	911,011	467,645	551,729	0
Additional lands allocated to provide vegetative and spatial diversity (acres)	296	119,172	94,334	43,854	40,952	40,341	30,211	0	31,757	0
Major drainages adequate old growth for all old growth species (% of total)	59	70	27	79	78	79	82	30	79	99

Another nongame species group requiring a special management strategy is snag-dependent species. A snag management policy (see proposed Lolo Forest Plan, Policy No. 12 and Appendix N, Proposed Lolo Forest Plan) provides for maintaining viable habitat for snag-dependent wildlife. The cost of this policy is represented by the volume of merchantable snags and live tree snag replacements reserved from harvest, and is calculated to be approximately 642 thousand board feet per year.

Alternative d provides habitat to maintain viable populations of most species (especially old-growth dependent species) in about 79 percent of the Forest's 71 major drainages. While Alternatives b, f, and g provide more acres of habitat suitable for old-growth dependent species due to the deemphasis of timber management, the distribution of this habitat across the Forest is poorer than in other alternatives. Alternative c does not provide enough acreage to allow sustaining viable populations of old-growth dependent species across the Forest, while Alternative e has the lowest acreage available to maintain animal diversity.

c. Threatened and Endangered Species

In all alternatives, the protection of essential threatened and endangered species habitat receives primary management emphasis. Legal requirements are met in all alternatives. Management and restoration of the threatened and endangered species is accomplished in cooperation with the U.S. Fish and Wildlife Service, the Montana Department of Fish, Wildlife, and Parks, and other public and private research groups.

The success of gray wolf, peregrine falcon, and bald eagle populations on the Forest depend more on the conduct of management activities and their related standards and guidelines than on land use decisions. The proposed Forest standards and guidelines (see proposed Lolo Forest Plan) addressing the management of gray wolf, peregrine falcon, and bald eagle habitat, and the management prescriptions assure consideration of these species regardless of the selection of a management alternative.

Peregrine Falcon: Peregrine falcon populations sharply declined in past decades. Several years ago this trend reversed nationwide, primarily as a result of hacking (releasing artificially reared juvenile birds), and populations are now increasing. Pesticide use, illegal killing, and illegal taking by falconers affected populations; habitat availability has not influenced populations. Peregrine falcon habitat exists on the Forest, but it is currently unoccupied. Annual surverys will be done to check for nesting activity and to insure that adjacent projects do not impact these historic nesting eyries.

Bald Eagle: Bald eagle populations on the Forest appear relatively stable. While a few eagles do nest on the Forest, most of the Forest's eagles "winter" here, migrating from Canada, where the population is not considered endangered. The Forest provides more bald eagle habitat than is currently occupied.

Potential bald eagle nesting habitat is protected under all alternatives by recreation, visual or other minimal development Management Areas. Although nest protection practices are on file, these will be revised using the Montana Bald Eagle Management Plan (MBEMP) when that document is complete.

Gray Wolf: Wolf populations on the Forest have declined during the past century. The current population status and trend of this species are relatively unknown. Population declines are primarily caused by predator control programs, indiscriminate shooting and trapping, and changes in land use patterns. Currently, coyote control programs on adjacent private lands continue to pose a threat to whatever wolf populations exist.

A recovery plan for the bald eagle is currently being prepared; those for the peregrine falcon and gray wolf are complete, and their intent is reflected in the Forest-wide standards (Proposed Lolo Forest Plan).

Table II-20 displays the acres of wolf, eagle, and peregrine falcon habitat located within inventoried roadless areas on the Forest.

Table II-20: Wolf, Eagle, and Peregrine Falcon Habitat within Lolo Forest Roadless Areas

Roadless Area Number	Wolf Habitat Acres	Peregrine Falcon Habitat Acres	Eagle Habitat Acres
1141	0	0	0
1142	0	0	0
1152	0	0	0
1202	0	30	0
1204	0	0	0
1205	0	0	0
1209	0	0	0
1220	0	0	0
1301	0	0	0
1302	0	0	0
1424	0	40	0
1485	107,500	0	0
1665	0	40	0
1781	0	0	0
1784	0	0	0
1785	0	0	600
1786	0	60	900
1790	0	0	0
1791	0	200	3000
1792	0	0	0
1794	0	100	7000
1795	0	0	6000
1796	0	0	2400
1798	0	0	0
1799	0	0	400

Table II-20 (continued)

Roadless Area Number	Wolf Habitat Acres	Peregrine Falcon Habitat Acres	Eagle Habitat Acres
1800	0	0	0
1803	0	0	0
1805	0	0	0
1806	0	0	0
1807	0	0	0
1808	0	0	0
1809	0	0	0
1811	0	0	0
1812	0	0	0
1814	0	0	0
L1LAQ	0	0	0

(Table II-14 shows the roadless area names.)

Grizzly Bear: The past century has seen drastic declines in grizzly bear populations. The principal factors responsible for this decline are habitat loss and the deliberate or indiscriminate shooting of bears. Now that the grizzly bear is protected by the Endangered Species Act, human-caused mortality is less of a problem than before, although it is still the number one problem inhibiting population recovery of the grizzly bear.

On the Lolo, grizzy bears occur in two locations including the Thompson Falls area north of Highway 200 (known as the Cabinet-Yaak Grizzly Bear Ecosystem), and the Seeley Lake area (known as the North Continental Divide Grizzly Bear Ecosystem). The Lolo shares both ecosystems with other Forests. On the Cabinet-Yaak ecosystem, other major National Forests include the Kootenai and Idaho Panhandle National Forests. On the North Continental Divide ecosystem, other Federally managed lands include Glacier National Park, and the Flathead, Helena, and Lewis and Clark National Forests. These ecosystems have been classified based on the Interagency Guidelines.1/

Occupied grizzly habitat on the Lolo totals 424,310 acres. This is categorized as both Management Situations 1 and 2 1/. Management Situation 1 lands are those lands in which the grizzly bear is present and which are essential to the recovery of the bear. Management Situation 2 lands are those lands where the bear is an occasional visitor and which are not essential to the recovery of the bear. Management Situation 3, a category for lands where grizzly bear occurrance is likely to result in mortality, such as campgrounds, dumps, and such, is not known to occur on the Lolo. In past analysis, a sizeable area of Management Situation 3 was designated in the Cabinet ecosystem. Since the recent development of protective

(Footnote on next page.)

management policies and operator clauses, it is felt that this area no longer fits the Management Situation 3 description and thus the area was upgraded to a Management Situation 2 category.

Table II-21 shows the acres of Management Situations 1 and 2 for the two ecosystems.

Table II-21: Acres by Management Situation 1/ for Each Grizzly Bear Ecosystem

Cabinet-Yaak Grizzly Bear Ecosystem	
Management Situation 1	74,333 acres
Management Situation 2	68,919 acres
North Continental Divide Grizzly Bear Ecosystem	
Management Situation 1	246,601 acres
Management Situation 2	34,457 acres

1/ Interagency Grizzly Bear Guidelines, Federal Register, Vol. 50, No. 102, Tuesday, May 28, 1985, p. 21696.

The two ecosystems have rather different sets of problems that may inhibit population recovery. The Cabinet-Yaak is an "island" ecosystem in that it is isolated from other ecosystems which inhibits natural in-and-out migration. Current grizzly bear populations appear to be at subviable levels. Thus recovery may be a very slow process, if possible at all, even assuming that all human-caused mortality is eliminated and the habitat is managed in an optimal condition. One long-term option that could speed recovery would be population "augmentation."

The North Continental Divide is connected with Canadian grizzly populations. This makes natural in-and-out migration possible which will help to level out and counterbalance fluctuations in populaton levels. Also, a large percentage of this ecosystem is protected by wilderness classification and Glacier National Park. Human-caused mortality has not been as much of a problem historically as it has in other ecosystems. Thus, overall, the North Continental Divide is in much better shape from a population standpoint than other ecosystems.

Table II-22 displays the effects of alternatives on grizzly bear habitat for the two ecosystems. Alternatives a, b, and c were developed under a grizzly bear inventory done in 1980 which recognized significantly less grizzly bear habitat than what is currently known to exist. Alternatives d, e, f, and g were developed under a more current inventory which recognized significantly more acres of grizzly habitat.

Table II-22: Effects of Alternatives on Grizzly Bear Habitat (M acres) and Eventual Recovery

These abbreviations appear in the grizzly bear recovery plan:

NCDGBE = North Continental Divide Grizzly Bear Ecosystem
CYGBE = Cabinet-Yaak Grizzly Bear Ecosystem

							Alternatives							
	a		b		c		d		e		f		g	
	*NCDGBE	CYGBE	*NCDGBE	CYGBE	*NCDGBE	CYGBE	*NCDGBE	CYGBE	*NCDGBE	CYGBE	*NCDGBY	CYGBE	*NCDGBE	CYGBE
Lands Intensively Managed for Grizzly Bear (M acres)	26.2	49.7	4.7	8.9	55.4 1/	62.9 1/	31.5	32.2	38.1	38.1	22.1	24.2	22.1	19.1
Number of Bears	12	6	11	5	14 1/	7 1/	14	7	14	7	14	7	14	7
Eventual Recovery to Nonthreatened Status	YES	YES	YES	YES 2	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

*NCDGBE - North Continental Divide Grizzly Bear Ecosystem. On the Lolo this includes much of the Seely Lake Ranger District, east of Highway 209 and also a portion of the District south of the Mission Wilderness.

GYGBE - Cabinet-Yaak Grizzly Bear Ecosystem. On the Lolo this includes most of the Plains and Thompson Falls Ranger Districts north of Highway 200.

1/ Although this alternative commits significantly more acres to intensive grizzly bear management, bear populations are not expected to exceed the population anticipated in the preferred alternative. The reason is that as more marginal acres are entered with inherently less enhancement potential, proportionately greater mortality/disturbance risks are created.

2 While essential haibtat is well protected by wilderness and backcountry, actual recovery may be slower due to the lack of areas in which intensive management (i.e., burning, etc.) may be practiced.

Table II-22a lists grizzly bear outputs for all Forests that share grizzly bear ecosystems with the Lolo. Also shown is the relationship of the Forests' anticipated grizzly bear population targets as disaggregated in July 1981 and an estimate of the population potential based on land capability. The Lolo does not meet the goal in the North Continental Divide Grizzly Bear Ecosystem in any alternative. Based on the physical characteristics of the area managed by the Lolo, it probably cannot exceed an average bear density of one bear per 26 square miles. This is significantly less than the density projected for the ecosystem as a whole. There currently is higher quality habitat within the ecosystem in the Swan Face and Triple Divide areas, but the vast majority of the Lolo's portion of the ecosystem is considered less productive than average. The maximum potential for number of bears is estimated at 14, which is significantly less than the recovery goal of 22.

Table II-22a: Grizzly Bear Population for National Forests Sharing Grizzly Bear Ecosystems

Cabinet-Yaak Grizzly Bear Ecosystem - Number of Bears

	Lolo NF	Kootenai NF	Idaho Panhandle NF's
Proposed Action	7	49	13
Maximum Potential	7	49	13
Recovery Goal	6	49	13
Current Population	0-2	20	1-5

North Continental Divide Grizzly Bear Ecosystem - Number of Bears

	Lolo NF	Kootenai NF	Flathead NF	Lewis & Clark NF	Helena NF
Proposed Action	14	12-15	205	85	19
Maximum Potential	14	13-16	235	115*	19
Recovery Goal	22	13	207	81	18
Current Population	6-12	13	150-180	85	19

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* Includes bear that also inhabit Bureau of Land Management and private land.

Two major strategies are employed in all alternatives to achieve population recovery. Only those management prescriptions that minimize human-caused mortality are permissible for Management Situation 1 lands. Also, nonwilderness lands within Management Situation 1 that are suitable for timber production are assigned to intensive grizzly management. The latter strategy utilizes prescribed burning and timber harvest to optimize habitat conditions while timing these activities around grizzly bear use periods. The degree to which this strategy is applied differs significantly by alternative and is displayed in Table II-22. Habitat enhancement is secondary to minimizing mortality as a recovery strategy for the grizzly bear.

Table II-22 lists the anticipated number of grizzly bear for each alternative and whether or not population recovery is likely to occur. There is little difference in numbers of bear between alternatives. The reason for this lack of output range is the Endangered Species Act leaves little room for anything but recovery regardless of alternative strategy.

Thus, all alternatives require that the grizzly bear be protected at a minimum level in all essential habitat. This limits land use assignments within essential habitat to wilderness, roadless, or in some cases a management prescription designed to optimize grizzly bear habitat. The variability between alternatives is primarily limited to what extent this intensive grizzly management prescription is applied.

6. Aquatic Environment/Fisheries Habitat

Constraints on activities that are allowed in the riparian zone are designed to insure that all alternatives provide adequate riparian protection. Other influences on the riparian zone not covered by the basic constraints which can impact fisheries are discussed below.

The Lolo Forest now supports about 905,000 catchable trout in 3,500 miles of fishing streams. Catchable trout refers to trout that are at least 6 inches in length. Total numbers of fish in lakes and reservoirs are not highly sensitive to the effects of alternatives. However, specific development projects can have an effect on individual streams, rivers, or lakes. The amount of improvement projects by alternative is shown in Table II-23.

Table II-23: Fish Habitat Improvement (Average Annual Acre-Equivalents)

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Plan Period										
1982 - 1985	50	20	10	90	90	90	90	0	0	0
1986 - 1990	50	10	5	20	20	20	20	0	20	0
Projections										
1991 - 2030	0	0	0	0	0	0	0	0	0	0

Potential populations of stream fish by alternative are depicted in Table II-24. The changes between alternatives reflect the different levels of riparian zone access, grazing management intensities and controls, and direct habitat improvements that vary by alternative.

Table II-33 depicts sediment production potential by alternative. Significant management activities, such as road construction in the riparian zone and the removal of protective cover, have the potential to affect the stability of landforms and stream channels and contribute sediment to streams. The composite rating shown in this table may be used as an indicator of sediment production that would adversely affect fish populations, as there is an expected inverse relationship between sediment production and fish population. In the future, more precise relationships will be developed when the R1/R4 Sediment Yield model is calibrated for the Lolo Forest streams (see Section F, Chapter IV).

Projected fish populations are changed from earlier DIIS's. The earlier numbers were based on population estimates for western Montana and northern Idaho waters from literature reviews made prior to 1982. Subsequently, fish population studies and estimates conducted on western Montana streams by the Montana Department Fish, Wildlife, and Parks in 1984 indicated substantially higher populations. This new data is incorporated as baseline information for the current alternative analysis.

Fish habitat improvement projects in Alternatives d, e, f, and g are intended to restore damaged streams to their fish productivity potential of the predamage condition. The extent of this improvement program represents less than 10 percent of all Lolo streams and represents the limit of opportunities now identified as being feasible to improve fish productivity.

Table II-24: Potential Catchable Fish Populations in Streams

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Stream Fish Population Potential (M fish > 6 inches)	905	868	823	964	966	968	970	665	893	856

Alternative d includes management prescriptions directed at enhancing the use and productivity of the riparian zone. Timber harvest is permitted to meet riparian management goals, with mature trees maintained to provide habitat for osprey, wood duck, and other nongame wildlife. Snags and decadent trees not a hazard to people or a source of disease will be retained as part of the natural ecosystem. Recreation will be managed to protect riparian values. Roads are the significant impact on riparian zones and Alternatives a, c, and e provide for more roads to be constructed in the riparian zone than the other alternatives. Combined with higher regulated timber harvest values in these areas, sediment production could increase and the fish population potential for catchable trout could be reduced. In these alternatives, a larger proportion of the livestock grazing use would occur in the riparian zone as well. Alternatives b, and f benefit the riparian ecosystem more than the other alternatives due to limited management activities in the zone, resulting in controls on livestock use and access and lower sediment production potentials.

Alternative g would benefit riparian zones in nonroaded areas and increase sediment production potentials in developed areas.

7. Range

Timber harvest within cattle allotments creates forage available to livestock. Available livestock forage varies by amount of timber harvest and assignment of winter range forage to big game. While grazing is considered a minor use on the Forest, it is important to the ranchers and outfitters who depend on it. Permits authorizing 13,000 animal unit months (AUM's) on National Forest Systenm lands were issued during the 1980 grazing season: 71 grazing permits authorizing approximately 2,100 cattle and horses to graze for about 10,300 AUM's and authorizing 1,800 AUM's for nonuse. In addition, an estimated 400 head of pack and saddle animals were allowed to graze about 900 AUM's under "free use" for recreational and administrative purposes. Permits were also issued to allow an additional 1,100 head of livestock to graze approximately 5,900 AUM's on waived private lands located within National Forest range allotments.

Table II-25 compares predicted average annual grazing use by alternative. Based on the analysis and stratification of grazing allotments (Appendix B-15), which includes identification of resource conflicts, a decrease from existing livestock grazing levels is shown under Alternatives b, c, and g for the first decade. The reductions in AUM's are necessary to resolve resource conflicts where the gross size, percentage of the allotment on National Forest land, and location of the allotment preclude cost effective investments in structures or added administration needed to maintain current AUM's.

Table II-25: Domestic Livestock Use, Midpoint First Decade
Thousand Animal Unit Months

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
1981 - 1990	13.8	10.6	11.5	14.0	13.1	13.5	12.6	14.7	13.0	12.8

While Alternatives a, d, e, and f increase grazing activity slightly, grazing of domestic livestock will be reduced in areas where resource protection costs exceed the values associated with livestock grazing. Special management will be given to riparian areas to protect and improve the physical and biological environment.

The slight increase of livestock use under these alternatives reflects the following: emphasis on more cost-efficient allotment management, which means combining some allotments to provide more management opportunities to increase carrying capacity; increased emphasis on elk winter range management to relieve the necessity to reserve forage for elk, cattle, and horses in allotments; and increase forage production within the range allotments on transitory range through the harvest of timber.

The decrease in grazing in Alternative c is due to the emphasis on economic efficiency in that alternative.

The small difference between continuation of the current situation (Alternative a) and the alternatives with the highest potential for grazing indicates there is little room for increasing the levels of grazing use on the Lolo Forest under any alternative. In all alternatives small, inactive allotments that cannot be managed efficiently will be phased out. The increased emphasis on riparian area management to maintain fish habitat may require the installation of stock control structures, or a reduction in the animal months allowed in order to resolve the conflicts.

8. Timber

All land managed by the Forest was tested for suitability for production of timber by applying the criteria discussed in Appendix B of this document. Tentatively suitable timberlands were assigned to prescriptions that meet the management objectives of a given alternative. High timber output alternatives have the largest suitable land base, as displayed in Table II-26. As emphasis shifts from producing timber to maintaining roadless recreation, visual quality, elk security areas, and wilderness management, the suitable timberland decreases. Those alternatives with the larger acreages of suitable timber have the potential to provide the most beneficial effect on the timber resource. These benefits include improved age class distribution, maintenance of healthy, vigorous stands, reduced threat of insects and disease, increased utilization, and higher production levels. The larger timber base affords better flexibility in achieving the base sale schedule because there is greater opportunity for geographic distribution of the acres.

Table II-26: Lands Suitable for Timber Management

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Land suitable for timber production (M acres)	1402	1099	1420	1239	1326	1204	956	1320	1207	0

A full range of alternatives was developed within the benchmark levels for timber. The maximum timber benchmark shows a Long Term Sustained Yield of 244 million board feet; the maximum PNV benchmark reduces this to 240 million board feet while utilizing a smaller suitable land area.

The harvest schedule for each alternative embodies nondeclining flow, which means that the planned sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade of the planning period and the harvest for any decade is not greater than the Long Term Sustained Yield capacity (36 CFR 219). The long-term sustained yield capacity is the highest uniform (nondeclining) wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple use objectives.

Harvest volumes and schedules were calculated by the FORPLAN computer model. Board foot volumes for each alternative are displayed in Table II-27 and cubic foot volumes in Table II-28. The unregulated volume shown is from commercial forest land that is not organized for timber production under Long Term Sustained Yield capacity principles (e.g., administration and recreation sites), or is from noncommercial species and products removed from suitable lands. The Base Sale Schedule does not include unregulated volumes.

Table II-27: Timber Program Outputs (MMBF)

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Allowable Sale Quantity (regulated volume) 1st Decade	111	104	130	107	107	107	90	123	124	0
Unregulated Timber Volume	7	17	9	15	15	15	12	18	13	0
Base Sale Schedule										
Plan Period										
- decade 1	111	104	130	107	107	107	90	123	124	0
Projections										
- decade 2	133	125	156	131	140	107	120	154	144	0
- decades 3	133	125	156	131	140	129	120	193	162	0
- decades 4-10	133	125	156	131	140	129	126	116-234	82-201	0
- decades 11-12	133	125	156	177	191	171	174	226-283	153-176	0
Long-Term Sustained Yield	201	173	211	178	191	171	174	240	176	

Table II-28: Timber Program Outputs (MMCF)

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Allowable Sale Quantity (regulated volume) 1st Decade	30.8	28.9	36.1	29.7	29.7	29.7	25	34.2	34.4	0
Unregulated Timber Volume	1.9	4.7	2.5	4.2	4.2	4.2	3.3	5	3.6	0
Base Sale Schedule										
Plan Period										
- decade 1	30.8	28.9	36.1	29.7	29.7	29.7	25	34.2	34.4	0
Projections										
- decade 2	36.9	34.7	43.3	36.4	38.9	29.7	33.3	42.8	40	0
- decades 3-12	36.9	34.7	43.3	36.4-49.2	38.9-53.1	35.8-47.5	33.3-48.3	32.2-78.6	22.8-55.8	0 0
Long-Term Sustained Yield	55.8	48.1	58.6	49.4	53.1	47.5	48.3	66.7	48.0	0

The timber output from each alternative reflects the emphasis of philosophy and level of the multiple resource outputs unique to each alternative. The Base Sale Schedules display a realistic level of development that is associated with each alternative. As shown in Table II-28, Alternative c represents the conditions most suitable for high timber production. Alternatives b, d, e, and f increase the Programmed Sales Offered (regulated and unregulated) over the current situation in Alternative a, but considerations for other resource outputs prohibits attaining higher levels. The Long Term Sustained Yield capacity is reached only in Alternatives d, e, f, and g, by the 12th decade. The cumulative effect of providing for animal diversity, elk habitat productivity, Type II recreation opportunities (roadless area management), visual quality objectives, and in Alternatives f and g, wilderness, results in a Base Sale Schedule of about 23 million board feet less than the higher levels in Alternative c. Alternative b and g display the lower acreage of land considered suitable for timber production. In order to maintain their timber outputs, more intensive management is required, and this in turn results in greater effects on suitable lands.

Although there is a management prescription that provides habitat for old-growth dependent species, there is a low marginal cost associated with this assignment because much of the old-growth habitat is accounted for in wilderness, roadless management, and uneconomically suitable management areas.

Projections for future decades will provide an opportunity to offer more timber if budget and access needs can be met during the first decade and the demand is substantiated. The Forest could increase its Allowable Sale Quantity offered annually from a present level of approximately 80 MMBF to 131 MMBF by the beginning of the second decade of implementation of Alternative d (Proposed Action).

Under any alternative, the Forest would plan to harvest those timber types susceptible to high mortality losses, such as timber infected by the mountain pine beetle. Timber that is currently infected or that appears to be in danger of infection and is located on sites suitable for timber production is planned for harvest within the first decade. Under current and projected budget levels and access, the Forest should be able to harvest to prevent high mortality loss without a departure from the base sale schedule. An Insect Susceptibility Modification alternative (page II-17) provides information on the trade-offs associated with this still higher level of control.

All alternatives reflect revised utilization standards that were prescribed for use in the Northern Regional Guide. The results of an analysis of the volume and economic value impacts of converting from the current utilization standards to those in the Regional Guide are shown in Figure II-5 and Tables 29a and 29b for the Maximum PNV Benchmark and the Proposed Action Alternative.

Figure II-5

Comparison of Current vs. Regional Guide Utilization Standards

Length	Min. d.b.h.		Min. Top d.i.b.	Min. Piece
Standard	Lodgepole Pine	All Other Species	All Species	All Species
Current	7"	8"	5.6"	8'
Proposed	6"	7"	4.6"	8'

Table 29a: Comparison of Utilization Standards

Comparison of timber volume (MCF and MBF), Present Net Value, and Acres Assigned to Timber between the current and Regional Guide utilization standards. Volumes are averages for the first five decades.

Item	Current Stds.	Proposed Stds.	Difference	% Change
Max PNV Benchmark:				
MMCF	375	496	121	24
MMBF	1427	1785	358	20
PNV(MM$)	348	379	31	8
M/ACRES Assigned to Timber	1131	1320	189	14
Preferred Alternative:				
MMCF	293	351	58	16
MMBF	1110	1260	150	12
PNV(MM$)	154	174	20	11

Table 29b: Comparison of Species and Diameters Between Current and Regional Guide Utilization Standards

Numbers presented reflect the harvest schedule for the first decade under the preferred alternative.

Volume	Species					
	LP	PP	DF	AF	SP	OTHER
Current Stds.						
MMBF	252.2	87.3	328.2	145.9	120.0	132.4
Regional Guide Stds.						
MMBF	239.1	87.3	336.0	151.8	122.0	129.8

Volume	Diameter Class				
	6-7.9	8-11.9	12-15.9	16-17.9	>17.9
Current Stds.					
MMBF	79.4	727.4	235.0	24.2	3.4
Regional Guide Stds.					
MMBF	111.4	700.8	227.0	23.5	3.3

Figure II-5 displays the current Utilization Standards and those proposed in the Regional Guide. Regional Guide Standards call for the utilization of smaller diameter trees. The alternatives and benchmarks displayed in this document were built on the Regional Guide Standards. Tables 29a and 29b were constructed to estimate the affects of moving from the current to the proposed standards for the preferred alternative and the Max PNV benchmark.

Table 29a shows differences in timber production and present net value using the two standards. Changes in the first decade harvest schedule for the preferred alternative are displayed in table 29b. These changes reflect the exclusion of 6-7" DBH lodgepole pine and 7-8" DBH trees of other species from the scheduled timber harvest. Additional harvest acres are required to make up the resulting loss in volume and these acres were taken from Habitat Group 5 -- this explains the increase in lodgepole pine harvested when standards are shifted from the proposed to the current.

Only 3 percent of the timber harvest planned for the first decade is in diameter classes that are not included under current utilization standards. The large differences implied by table 29b reflect the longer term implications of a change in the standards. Younger stands will be harvested in the future and these stands will contain more trees in the smaller diameter classes.

Other timber activities are displayed in Tables II-30 (Silvicultural System) and Table II-31 (Silvicultural Treatment) that show relationships between alternatives.

Table II-30: Projected Acres Harvested by Silvicultural System 1/

Alternative	Time Period	Clearcut	Shelterwood	Selection	Commercial Thin	Total
a	50-year Total	320,000	534,000	98,000	120,000	1,072,000
	Average Annual	6,400	10,680	1,960	2,400	21,440
b	50-year Total	265,000	537,000	5,000	367,000	1,174,000
	Average Annual	5,300	10,740	100	7,340	23,480
c	50-year Total	366,000	577,000	17,000	392,000	1,352,000
	Average Annual	7,320	11,540	340	7,840	27,040
d	50-year Total	344,000	333,000	48,000	26,000	751,000
	Average Annual	6,880	6,660	960	520	15,020
e	50-year Total	307,000	537,000	75,000	218,000	1,137,000
	Average Annual	6,140	10,740	1,500	4,360	22,740
f	50-year Total	289,000	339,000	73,000	197,000	898,000
	Average Annual	5,780	6,780	1,460	3,940	17,960
g	50-year Total	299,000	402,000	19,000	69,000	789,000
	Average Annual	5,980	8,040	380	1,380	15,780
Benchmark:						
MAX PNV	50-year Total	337,000	853,000	0	284,000	1,474,000
	Average Annual	6,740	17,060	0	5,680	29,480
RPA RUN	50-year Total	319,000	727,000	120,000	187,000	1,353,000
	Average Annual	6,380	14,540	2,400	3,740	27,060
MIN LEVEL	50-year Total	0	0	0	0	0
	Average Annual	0	0	0	0	0

1/ The numbers in the table are the levels projected by the FORPLAN model and represent the optimal way of meeting the objectives and constraints of each alternative; they do not represent acreage targets. Determination of the actual silvicultural system on a stand basis will be made by a certified silviculturist after an on-the-ground analysis.

Table II-31: Projected Average Annual Acres of Silvicultural Treatment by Decade (M acres) 1/

Alternatives		Decade	Clearcut	Shelterwood			Selection	Commercial Thin	Total
				Prep Cut 2/	Regen Cut 3/	Ovrwd Cut 4/			
a	Plan Period	1	7.6	.1	8.1				15.9
	Projections	2	7.6	2.0	3.6	5.2	.1		18.5
		3	5.1	3.3	.5	8.1	9.6	1.9	28.5
		4	7.0	2.7	4.3	3.6		4.8	22.4
		5	4.7	11.2	5.3	.5	.1	5.3	27.1
b	Plan Period	1	6.5		7.3		.1	1.1	15.0
	Projections	2	6.5	.1	7.1		.1	5.1	18.9
		3	5.2	2.0	1.2	7.3	.1	11.5	27.3
		4	3.9	4.6	.4	7.1	.1	12.2	28.3
		5	4.4	11.4	4.0	1.2	.1	6.8	27.9
c	Plan Period	1	8.4		8.5		.1	.2	17.2
	Projections	2	8.4		7.4		.1	7.4	23.3
		3	7.3		4.8	8.5	1.3	6.7	28.6
		4	6.0	2.5	1.4	7.4	.1	18.0	35.4
		5	6.5	7.7	4.7	4.8	.1	6.9	30.7
d	Plan Period	1	3.7	.8	5.1	5.7	1.6	.2	17.1
	Projections	2	5.1	.7	5.4	5.1	1.6		17.9
		3	5.1	.8	3.8	5.4	4.3		19.4
		4	7.3	5.6	1.4	3.8	1.6		19.7
		5	7.8	1.8	8.1	1.4	1.6		20.7
e	Plan Period	1	3.7	5.3	1.7	5.7		3.0	19.4
	Projections	2	6.7		12.7	1.7		0.1	21.2
		3	4.8		3.0	12.7	7.5	6.4	34.4
		4	8.0	1.2	3.3	3.0		4.8	20.3
		5	7.5	2.2	3.6	3.3		1.8	18.4
f	Plan Period	1	3.7	5.2	0.9	5.5		6.7	22.0
	Projections	2	5.5		4.5	0.9		0.1	11.0
		3	5.1		3.7	4.5	7.3	2.1	22.7
		4	7.8	0.1	3.4	3.7		1.8	16.8
		5	6.8	1.6	2.0	3.4		3.5	17.3
g	Plan Period	1	3.7	1.3	3.5			1.0	9.5
	Projections	2	6.1		5.8	3.5		0.2	15.6
		3	5.7		5.1	5.8	1.9	0.4	18.9
		4	7.5		2.7	5.1		0.4	15.7
		5	6.9	0.5	4.2	2.7		0.5	14.8
Benchmarks:									
MAX PNV		1	3.7	5.2	1.7	5.7		8.3	24.6
		2	6.5		14.9	1.7			23.1
		3	7.1		10.1	14.9		0.3	32.4
		4	8.2		6.8	10.1		3.2	28.8
		5	8.2	7.7	5.4	6.8		10.4	38.5
RPA RUN		1	3.5	2.2	5.6		1.0	8.4	20.7
		2	8.0	6.7	1.0		4.4	6.2	26.3
		3	5.1		14.0	5.6	1.1	0.1	25.9
		4	7.3	1.7	14.2	1.0	1.1	0.8	26.2
		5	8.0	3.3	3.3	14.0	4.4	3.2	36.2
MIN LEVEL		1	0	0	0	0	0	0	0
		2	0	0	0	0	0	0	0
		3	0	0	0	0	0	0	0
		4	0	0	0	0	0	0	0
		5	0	0	0	0	0	0	0

1/ The numbers in the table are the levels projected by the FORPLAN model and represent the optimal way of meeting the objectives and constraints of each alternative; they do not represent acreage targets. Determination of the actual silvicultural system on a stand basis will be made by a certified silviculturist after an on-the-ground analysis.
2/ Preparatory Cut: The first step of a 3-step shelterwood.
3/ Regeneration Cut: The second step of a 3-step shelterwood, or the first step of a 2-step shelterwood
4/ Overwood Cut: Removal of the mature trees after natural regeneration has established.

Timber harvest under Alternative d will be distributed throughout the Forest to bring all areas suitable for timber production under management and regulation. Timber harvest activities will be compatible with the standards for wildlife habitat diversity, water, visual quality, and the other management practices as specified in management area direction. Reforestation and timber stand improvement activities will occur at increased levels during the planning period. Where possible, genetically superior stock will be used in reforestation.

Implementation of any one of the alternatives will result in a different mix of silvicultural systems applied to different numbers of acres than with the other alternatives. As harvest emphasis is adjusted by habitat group from one alternative to another, the number of acres treated and volumes removed will change. The range of treatments vary from 3,500 to 8,400 acres of clearcut, 900 to 8,500 acres of shelterwood, and 0 to 1,600 acres of selection systems per year depending on the alternative. The rationale for the application of silvicultural systems by habitat group follows:

> Generally, even-aged management will be used on the Lolo Forest. The exception to this will be portions of sensitive visual areas, portions of the riparian zone, climax ponderosa pine sites, and very dry Douglas-fir sites. On major portions of the Lolo Forest, insect and disease problems, steep slopes, or windfirmness of the stand preclude uneven-aged management. In other cases, maintenance of desirable species or other management objectives may preclude use of uneven-aged managment.
>
> Habitat Group 1 represents about 2.6 percent of the Forest. Severe sites and regeneration problems preclude large (72 acres) openings without the risk of extended recovery periods (750 years) to restock the site. For this reason, only selection or group selection harvest will be used which will promote an uneven-aged stand structure.
>
> Habitat Group 2 is found on about 19 percent of the Forest. While uneven-aged management has been applied to these sites, serious insect and disease problems have resulted. Multistoried stands of Douglas-fir provide optimum feeding areas for spruce budworm and the spread of dwarf mistletoe is enhanced by this structure. Ponderosa pine, which is normally a major component of this group, is soon removed from the stand by uneven-aged management increasing the problems of pest management. Larch found on portions of this group will also be lost under uneven-aged management. (For a more specific analysis of species requirements, see Silvicultural Systems for the Major Forest Types of the United States, Agriculture Handbook No. 445.) Minor portions of this type within high visual sensitive areas on in some riparian zones will be managed by uneven techniques.
>
> Habitat Group 3 is found on about 16 percent of the Forest. It is similar to Habitat Group 2; however, the amount of ponderosa pine is generally less and western larch is more common. These sites have similar problems to Habitat Group 2 concerning insect and disease. For this reason, uneven-aged management will be considered only in limited areas of the riparian zone and high visual sensitive areas.

Habitat Group 4 is found commonly throughout the Lolo Forest representing about 27.6 percent of the area. A wide variety of tree species is normally found in this group; however, uneven-aged management favors subalpine fir, grand fir, and western red cedar which are subject to windthrow. Engelmann spruce and lodgepole pine are also commonly found on these sites which are also highly subject to windthrow. Partial cutting on these sites represents the highest risk for windthrow damage. Spruce budworm damage on grand fir and Douglas-fir are common and will increase with development of multistoried stands. Species such as ponderosa pine, western white pine, and western larch, which are resistant to these problems, are not able to maintain themselves under selection harvest methods thereby reducing the diversity of the stands. For these reasons, the sites normally do not lend themselves to uneven-aged management. Wind protected areas in riparian zones and some highly sensitive visual areas will be managed with uneven-aged management.

Habitat Group 5 - About 19.5 percent of the Forest is in this group. Lodgepole pine is a major component with lesser amounts of Douglas-fir, western larch, subalpine fir, and Engelmann spruce. With the application of uneven-aged management, the Douglas-fir and western larch component will be eliminated or drastically reduced. The remaining species are subject to windthrow and partial-cut stands represent the highest risk. For these reasons, only isolated special situations lend themselves to uneven-aged management.

The remaining 15.5 percent of the Forest is in uncommercial sites and is not subject to timber management for wood production.

Subtle and gradual changes will occur in most watersheds resulting in generally younger, more healthy, and diverse stands with a greater variety of age classes. There will be some short-term losses in Foreground visual quality resulting from openings required to renew aging and uniform stands. Such openings will be spaced and timed so that adverse visual impacts are minimized. The conversion of mature/overmature timber stands assigned to regulated timber management activities will take approximately 70 years.

Section 13(a) of the National Forest Management Act of 1976 requires the calculation of the sustained yield on individual proclaimed National Forests. A portion of the proclaimed Lolo National Forest is administered by the Deerlodge National Forest and is not included in the calculations displayed above. An evaluation of the analysis performed indicates the minor changes in timber volume that occur between decades on the proclaimed Forest have no significance when considering the maximization of net public benefits on the Lolo and Deerlodge Forests. The calculation of long-term sustained yield of the proclaimed Lolo National Forest for the proposed actions is described in Section VIII, Appendix B, of this EIS.

the associated slash disposal and site preparation, and grazing--especially in riparian zones. The actual risk of increased sediment yield will vary depending on the amount of soil disturbance, the type of treatment, soil material, and various other physical and biological factors. As roads stabilize and disturbed sites revegetate, sediment production decreases.

Table II-33 displays the amounts of sediment-producing activities for the alternatives, as indicators of their sediment production potential. Using road construction and timber harvest levels as the principal indicators, the alternatives are shown as to their relative risk of affecting water-related beneficial uses, based on significant differences in sediment production potential.

Table II-33: Sediment Production Potential of Alternatives
(Average Annual, Decade 1)

Sediment Producing Activities				Alternatives				Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Road Construc. (Miles)	172	161	166	140	141	127	107	198	126	0
Tmbr. Harvest (M acres)	15.9	15.0	17.2	15.2	19.4	22.0	13.9	24.6	20.7	0
Grazing (MAUM's)	13.8	10.6	11.5	14.0	13.1	13.5	13.6	14.7	13.0	12.8
Composite Rating	High	High	High	Med	Med	Med	Low	High	Med	Low

Management practices will be used in all alternatives to carry out these activities to assure that they will meet State water quality standards. These practices are referred to as Best Management Practices (BMP). Alternative d will produce lesser amounts of sediment as compared to the current management direction (Alternative a). Water yield increases will also be less as a result of reduced regulated timber harvests in the riparian zone. Some temporary increase in sediment may be expected from an increase in burning on winter ranges. Alternative f has a low management intensity and, as a result, the potential for sediment production and water yield increases are moderate to low. Alternative b, with a nonmarket emphasis for the Forest as a whole, retains an intensive timber resource program on the available acres in order to maintain timber's contribution to community stability. A high degree of clearcutting increases the water yield and sediment production potential. Alternatives c and e will produce water that meets Federal and State standards but would have higher relative potentials for sediment production and water yield increases reflecting higher roading needs and soil disturbance from higher timber outputs. Alternative g has a lower amount of land in the suitable timber base. Management intensity on these lands will be high, thus both water yield and sediment increases from these lands will be relatively high on a per acre basis. On a Forest-wide basis, these outputs are low compared to other alternatives as shown in Table II-33 because of the lesser total amounnt of intensively managed lands.

The effects of sediment production on water related beneficial uses will be evaluated during project development to ensure meeting Forest water quality goals. Projects that will not meet State water quality standards will be redesigned, rescheduled, or dropped. For any alternative, there is a potential to control projected sediment increases. Practices such as temporary stream diversion around culverts being installed, fill-slope erosion traps, better seeding of disturbed areas, and road surfacing in critical areas would reduce sediment increase projections and help achieve water quality management goals.

10. Minerals, Oil, and Gas

In general, National Forest System lands are open to development for the recovery of valuable mineral resources. Locatable minerals are open to appropriation under the General Mining Law of May 10, 1872. Oil and gas, phosphate, coal, and other non-metalliferous minerals are available for development under the Minerals Leasing Act of 1920. All minerals on lands with acquired status are leasable. Mineral development has long been recognized as a legitimate use of National Forest System lands.

While National Forest System lands are available for mineral development, various restrictions and mitigating measures may be necessary to protect other resource values and to provide for an orderly development of the mineral resource itself.

Under Alternative d, access restrictions on mineral activities would be stringent, with over 20,000 acres of very high mineral potential land managed for roadless recreation. About 545,670 acres of the Forest would be designated for wilderness/roadless management. Alternative a includes some 12,800 fewer acres of very high mineral potential land in wilderness/roadless management than Alternative d. Alternatives b, f, and g are the most limiting in terms of access for mineral exploration and development because of the amount of very high mineral potential land recommended for wilderness/roadless management. While Alternatives c and e include some of the same acreage of very high mineral potential lands in a wilderness/roadless category, road access and energy leasing stipulations are less restrictive than those found in Alternatives b, d, f, and g.

Lolo National Forest System lands were analyzed as to mineral potential and resource tradeoffs and the appropriate stipulations were applied as displayed in Appendix B-7n (available upon request) and Appendices F and M of the Proposed Lolo Forest Plan.

The land area of mineral resource potential is displayed in Tables II-34 and II-35. The Forest road system will provide the principal access for mineral development and avoid the need for dual road systems. Collector roads are projected to be completed at the end of the second decade; however, the local road system is projected to be completed over the next 12 decades. About 7 percent of the Forest is now classified wilderness where no further mineral entry is allowed.

Table II-34: Area of Locatable Mineral Potential in Roadless Management (M acres)

Alternatives	Potential for Hard Rock Minerals: High	Potential for Hard Rock Minerals: Very High
a	66,407	16,885
b	129,285	36,670
c	88,103	22,574
d	36,858	4,042
e	23,958	0
f	60,965	30,573
g	144,709	53,673
Benchmarks:		
Max PNV	34,731	425
RPA Run	98,279	22,778
Min Level	144,709	53,673

Table II-35: Amount of Land in Energy Resource Categories (M Acres)

Category	Alternatives a	b	c	d	e	f	g	Benchmarks MAX PNV	RPA RUN	MIN LVL
A (Withdrawn)	333	359	343	353	138	529	914	138	350	353
B (Statutes)	147	147	147	147	147	147	98	147	147	147
C (Spec.Cond.)	4	4	4	4	4	4	4	4	4	4
D (Stnd.Stips)	1716	1590	1606	1596	1811	1420	984	1811	1599	1596

A = Withdrawn from mineral entry and leasing.
B = Specific stipulations required by law or Executive Order, i.e., Threatened and Endangered.
C = Special stipulations required by Regional Forester for resource protection.
D = Standard stipulations applicable to all leases.

11. Road System

There are now about 5,440 miles of system road on the Forest. The high timber output alternatives require over 6,100 additional miles be built for access to all the area assigned to timber harvest (Table II-44). The arterial road system is nearly complete, and about 75 percent of the collector system is in place. Most future construction will be local roads since that part of the system is only about 20 percent complete.

Construction of collector and local roads is expected to add from 1,070 miles (Alternative g) to 1,720 miles (Alternative a) of system road during the plan period (1st decade), and could approximate doubling the road system during the project period (next 11 decades). Local roads will be constructed as project needs dictate, while the collector road system is expected to be completed by the end of the second decade. Table II-36 displays the local and collector road construction needs by decade.

Local roads will generally be constructed by timber purchasers, but there is a need to finance roads with appropriated money where initial entry timber sales cannot carry the costs. This is especially true in the timber stands originating after the 1910 fires that are in need of silvicultural treatment to improve stand diversity. Roads constructed by capital investment will approximate one-third of the total miles constructed in any one year.

The road system will be managed to reduce adverse effects on resources. Road management includes maintenance, use restrictions, and closures. Arterial roads and a substantial mileage of the collector roads will generally be open year-round. Most local roads will be closed.

Table II-36: Road Construction By Decade (Miles/Year)

Alternatives		Time Period	Construction	
			Local Roads	Collector Roads
a	Plan Period	1981-1990	108	64
	Projections	1991-2000	138	29
		2001-2010	138	--
		2011-2020	13	--
		2021-2030	61	--
b	Plan Period	1981-1990	125	36
	Projections	1991-2000	99	49
		2001-2010	140	--
		2011-2020	81	--
		2021-2030	69	--
c	Plan Period	1981-1990	99	67
	Projections	1991-2000	125	26
		2001-2010	101	--
		2011-2020	128	--
		2021-2030	72	--
d	Plan Period	1981-1990	75	65
	Projections	1991-2000	107	21
		2001-2010	101	--
		2011-2020	113	--
		2021-2030	46	--

Table II-36 (continued)

Alternatives		Time Period	Construction	
			Local Roads	Collector Roads
	Plan Period	1981-1990	52	89
		1991-2000	83	48
e	Projections	2001-2010	178	--
		2011-2020	168	--
		2021-2030	38	--
	Plan Period	1981-1990	78	49
		1991-2000	102	24
f	Projections	2001-2010	140	--
		2011-2020	122	--
		2021-2030	70	--
	Plan Period	1981-1990	107	--
		1991-2000	99	--
g	Projections	2001-2010	155	--
		2011-2020	95	--
		2021-2030	72	--
Benchmarks:				
	MAX	1991-1990	96	102
	PNV	1991-2000	94	55
		2001-2010	156	--
		2011-2020	42	--
		2021-2030	--	--
	RPA	1981-1990	63	63
	RUN	1991-2000	117	39
		2001-2010	102	--
		2011-2020	46	--
		2021-2030	73	--
	MIN LVL	All Time Periods	-0-	

12. Fire

Wilderness areas on the Forest have been or are being evaluated for application of fire management prescriptions. Prescriptions for the Scapegoat/Bob Marshall Wilderness complex range from immediate control in areas where public safety or other resource values are important to monitoring only where it is desirable to restore fire to the ecosystem. Outside wilderness, land assigned to timber production will be protected from wildfire but prescriptions may allow fire to become a part of the ecosystem on other lands. Alternatives vary in the application of fire management prescriptions by the amount of land to be managed for wilderness and the extent of wildlife and range improvement programs using fire.

The risk of fire is present in all alternatives and will increase as more people use the Forest for various activities and live within or near it. Management activities that increase the risk of wildfire and the difficulty to control include precommercial thinning, as natural abatement is the principal means of disposal. Alternatives a, b, and c have high amounts of precommercial thinning; Alternatives e and f have moderate amounts; and Alternatives d and g have the least amounts.

Atmospheric inversions and air stagnation are prevalent in the fall, inhibiting smoke dispersal from prescribed burning used for fuel abatement. Burning activities are suspended on days when smoke and particulate emissions contribute to deteriorating air quality. Coordination with State and local fire protection organizations will continue in all alternatives in accordance with The Montana Airshed Group and Cooperative Smoke Management Plan.

Land assignments determine the level of protection for each alternative. Lands managed for timber emphasis provide for a higher level of protection than other assignments. Fire suppression responses--control, contain, or confine--also differ for each assignment. Where resource values are high, a control response is generally necessary to protect these values, while contain or confine are more appropriate on lands with lower tangible values and where fire can be a contributing factor to the ecosystem.

Table II-37: Average Annual Activity Fuel Treatment (M Acres)

	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Decade 1 (Plan Period)	11.1	9.8	11.8	6.5	8.3	10.6	6.9	13.1	11.3	0

Activity fuel treatment (Table II-37) is necessitated by the total timber harvest. Both activity fuel and the difficulty associated with that treatment are used to compare alternatives. The difficulty of treatment increases as the number of trees left standing in a cutting unit increase. For example, fuel treatment in a commercial thin unit is much more difficult than in a clearcut. Alternatives c and d have a moderately high ranking due to the combination of acres of total harvest and the high amount of commercial thin or shelterwood cutting. Alternatives b, e, and f are all moderate in ranking, but for differing reasons. Alternative b is moderate in terms of total harvest acres and in the difficulty to treat. Alternatives e and f are moderate in total harvest volume, high in commercial thin and shelterwood systems, and low in the selection harvest system. Alternative g is ranked low to moderate. It has a relatively low total harvest volume, but is moderate in the amounts of commercial thin and shelterwood systems. It has a high degree of activity concentrated on a few acres compared to other alternatives. Alternative a has a low ranking. Although it has a moderate amount of shelterwood cutting, it has low amounts of commercial thin and selection harvest and the second lowest in total harvest volume.

The risk of human-caused fires is lowest in Alternatives b, e, f, and g due to the lesser amount of road access available for public use compared to the other alternatives (Table II-44).

13. Energy Consumption

Energy consumption for each alternative was ascertained by multiplying Regional coefficients of energy use for various activities times 13 variable factors. Most of the factors were related to timber harvest volume, acres harvested, and road construction. Dispersed and developed recreation factors varied by RVD use and included energy expended by the user from home to recreation area or site.

Table II-38 displays energy consumption in terms of British Thermal Units (BTU's) with all forms of energy use (gasoline, propane, electricity, etc.) converted to this expression. Timber harvest and road construction are the high consumers of energy, accounting for approximately two-thirds of each alternative's total requirements.

Table II-38: Average Annual Energy Requirements (Billion BTU's)

Alternative	Reg. Timber Harvest	Unreg. Timber Harvest	Road Const.	Road. Maint.	Rec. and Range	Oil and Gas	Forest Service	TOTAL
a	144	3	74	6	58	2	44	331
b	139	13	91	6	58	1	45	353
c	167	10	82	6	58	2	49	374
d	121	5	76	6	58	2	42	310
e	121	5	75	6	58	2	47	314
f	121	5	74	6	58	2	44	310
g	102	2	67	6	58	2	42	279
Benchmarks:								
MAX PNV	184	15	104	6	58	2	47	416
RPA RUN	171	17	80	6	58	2	47	381
MIN LEV	0	0	0	2	16	2	12	32

14. Energy Corridors

Major east-west utility corridor planning will inevitably look at the Lolo National Forest lands due to land constraints (National Parks, wilderness, etc.) to the north and south. Potential corridor windows are identified in the draft Pacific Northwest Long Range East-West Energy

Corridor Study, Phase I, Bonneville Power Administration, December 1977. The alternatives place differing constraints on the availability or desirability of using these windows for the siting of utilities.

Corridor Segment R-15 is located on the Seeley Lake Ranger District in the vicinity of Jocko Pass. The entire segment passes through essential grizzly bear habitat (all alternatives) which is identified as an avoidance area.

Corridor Segment R-16 is located in the Moccasin Ridge-Greenough Creek area, south and east of Missoula. Avoidance areas in all alternatives are concentrated on the Clark Fork face, leaving only very narrow slivers of land available for siting without significant constraints. Alternatives c, d, and e, have other avoidance areas widely dispersed within the corridor. The new Garrison-Taft 500-kV transmission line utilizes a portion of the western end of this corridor segment in Miller Creek.

Corridor Segment R-17 runs in a northwesterly direction from Superior to Thompson Pass. Avoidance areas are concentrated at the western end of this segment in all alternatives. Alternatives a, c, and d have several more small avoidance areas scattered along the corridor segment. Alternative b has several scattered and small avoidance areas and also a very large avoidance area near the midpoint of the corridor. Alternative e contains several avoidance areas that span the corridor. Alternatives f and g have one or more exclusion areas (areas recommended for wilderness) that span the corridor. The new Garrison-Taft 500-kV transmission line occupies the east half of this window but then veers south, staying on the south side of the CC Divide, and avoids all the exclusion and avoidance areas in the west half of the window.

Corridor Segment R-16 roughly parallels (to the south) Lolo Creek and the Lewis and Clark Highway, U.S. 12, from Lolo to the State line. There are several avoidance areas scattered throughout the corridor segment in all alternatives. Alternative f constrains approximately half the width of the corridor for 4 1/2 miles with a proposed wilderness. Alternative g has a wilderness proposal bordering the corridor for 5 miles.

15. Below Cost Timber Sales

The discounted timber benefits for the planning horizon are greater than the discounted timber costs (Table II-41) which means that overall financial returns of the timber program is positive. However, the positive values do not mean that below cost sales have been avoided. Timber sales, whether below cost or not, were assessed in terms of how they fit into a comprehensive program of management for the Forest. The mix of outputs and associated costs and benefits produced by the different alternatives are the result of selecting prescriptions which most efficiently meet the objectives of the alternative. Cost efficiency was considered in (1) the development of the prescriptions (see Appendix B, Section III and IV) and (2) the FORPLAN model had a range of those prescriptions to choose from when determining an optimal solution for each alternative based on the objective of maximizing PNV. The timber harvest level in all alternatives is less than the timber harvest level in the maximum PNV benchmark which represents the most economically efficient mix of management presciptions and resource outputs for the Forest.

In spite of alternative and prescription cost efficiency objectives, indications are that below cost sales will occur (Table II-42). When examining decade 1 alone, the overall net receipts (includes other resource programs besides timber) are negative for all alternatives and the Max PNV benchmark. By decade 3, the net receipts are projected as positive for the maximum PNV benchmark but slightly negative for all alternatives. By decade 5, the net receipts for all alternatives are projected as positive. Sales with high investment costs in the immediate future are followed by sales in the future that have lower costs and higher returns so that the entire set of management activities provide a positive return. As pointed out by a research study on below cost, efficient management and below cost sales are not incompatible (Schuster and Jones 1985).

In implementing any alternative, however, further project level analysis will be required prior to implementing that activity. Regional Office direction requires that a project level analysis of each timber sale over one million board feet will be made to assure it has been designed with the most cost-effective measures possible in keeping with environmental concerns. This feasibility analysis will examine strategic items in the sale design process to assure consideration of economic impacts of these items on the sale value. Requirements of this analysis have been added to the final Forest Plan.

16. Community Effects

a. Local Economic Impacts in Flathead, Mineral, Missoula, Ravalli, and Sanders Counties

Changes in timber harvest, recreation use, livestock grazing, and Forest Service expenditures result in changes in personal income and employment in the Lolo Forest market area which is comprised of Flathead, Mineral, Missoula, Ravalli, and Sanders Counties. Within the five-county area, Forest activities from 1978 through 1980 accounted for approximately 2,400 jobs annually and $26 million/year in personal income. In 1979 there were approximately 70,700 total jobs in the five-county area with a total personal income of $1,194 million. Thus, Forest-related activities account for about 3.4 percent of the jobs and 2.2 percent of the personal income in the five-county area. The relative contribution of employment and income to the Lolo market area by alternative is displayed in Table II-38 and Figure II-6. Differences among alternatives in employment and income are primarily due to changes in timber outputs and Forest expenditures. The employment and income values include direct, indirect, and induced effects. The change in Forest-related employment by alternative varies from +1.4 to +2.2 percent. However, the total local employment would vary from +0.1 to +0.7 percent.

Table II-39: Local Employment (jobs); Local Income (MM$); Change from 1975-79 Average

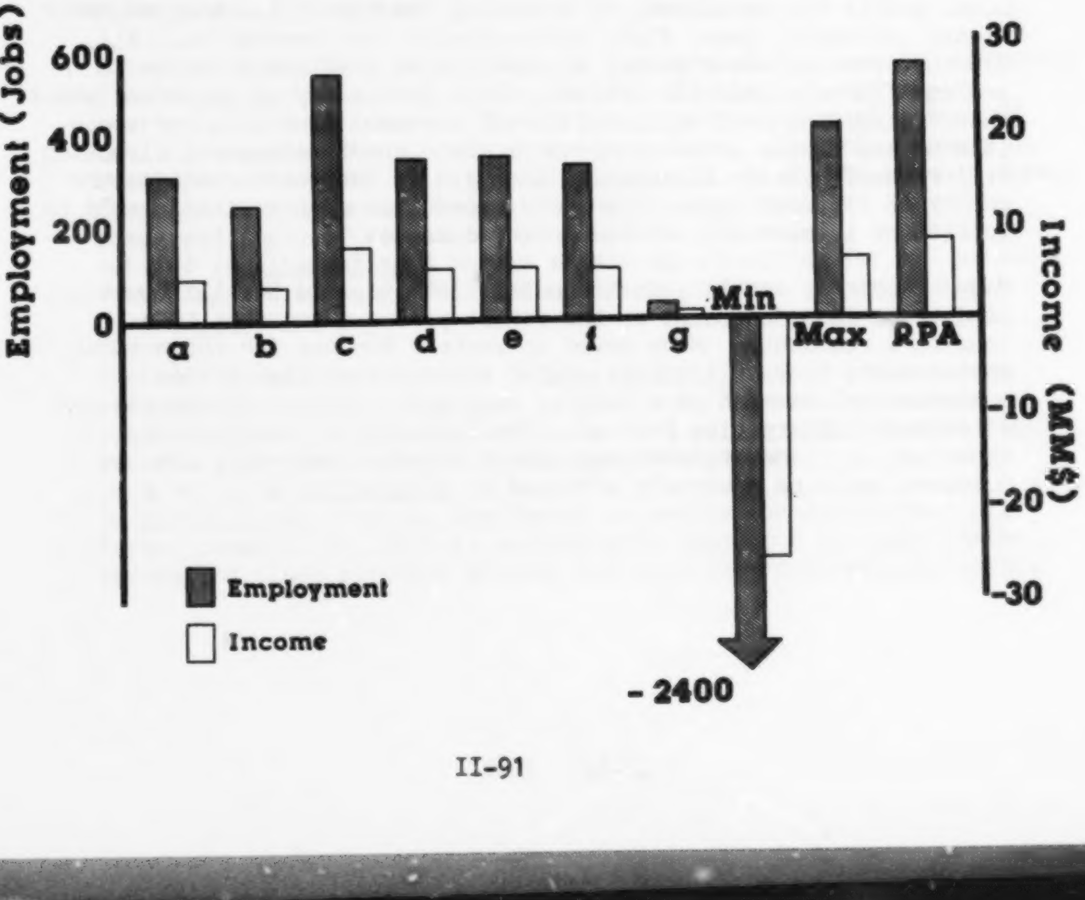
	Alternatives							Benchmarks		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Local Employment (No. of jobs)	+316	+246	+527	+344	+358	+330	+ 35	+414	+544	-2400
Income (MM $)	+4.7	+3.7	+7.9	+5.6	+5.7	+5.4	+0.9	+5.5	+8.1	-26.0

Timber output has the greatest impact on Forest-related employment and income. Timber-related businesses (logging, sawmills, and other wood products) and recreation-related services (wholesale/retail trade, hotels, and lodging, and eating and drinking) are the areas primarily impacted by changes in alternatives. Therefore, the following discussion focuses on changes in timber and recreation-related employment.

The market-oriented Alternative c contains expanded employment and higher income levels in wood products, ranching and minerals but reduced employment for guides, outfitters, and other recreation businesses. In low market alternatives such as b and e, usually expands for guides, outfitters, and recreational business because there are more recreation opportunities. Income levels for recreation-oriented jobs are lower than for the industry-based jobs. Other alternatives such as a, d, f, and g, maintain varying levels and mixes of employment opportunities.

Figure II.-6

Local Employment, Local Income Change from 1975 - 1979 Average



b. Social Effects in Western Montana

While the level of employment and income are important in the quality of life, it does not give the entire picture of the economic and social well being of local communities. In the small cities and rural areas of the west, an important part of peoples' total income comes not only from jobs and wages but from nonmarket goods and services that flow from the natural and social environment (Thomas M. Power Western Wildlands Winter, 1983). Four social variables--1) lifestyles; 2) attitudes, beliefs, and values; 3) social organization; and 4) land-use patterns are used to compare the effects generated by Forest outputs and activities. Descriptions are provided below of the interests and related ways of life of different groups of the dependent community and regional and national interests and how they may be influenced by the various alternatives. Comparisons are made to the current situation represented by Alternative a (Current Management).

Lifestyles. Several groups of people are discussed here and in Chapter III as those most likely to be affected by different Forest management programs. Natives and long-term residents of western Montana are accustomed to using the Forest for both commodity production and recreation opportunities. Many depend directly or indirectly on a healthy timber industry. Alternatives which would reduce average annual timber sell even in the short run could be a concern to people in these communities (Alternatives b and g). The counties rely heavily on the timber industry but also have other resource revenue producing industries (i.e., recreation, mining) that contribute to their economies. Alternatives which stress timber management and reduce big-game populations and fishing habitat, however, would also concern people and affect their accustomed lifestyles (Lolo National Forest Planning Records).

Local people are accustomed to accessing the Forest for many of their needs: firewood, game, fish, berry picking, and recreation. All alternatives include a policy of restrictive road use in order to protect fisheries and elk habitat. Some people may be concerned about this restriction on traditional Forest access. Residents who would like to see little or no change from the current management direction will probably prefer Alternative a or d. In these alternatives the supply of firewood, game, fish, and recreation opportunities would be sufficient to meet most of the future demands.

Many newcomers, settling in Missoula, Flathead, and Ravalli Counties, tend to be less dependent on the forest products industry than long-term residents. Many moved to western Montana for the natural environment; they will likely prefer alternatives that stress nonmarket values such as wildlife, recreation, visual resources, and wilderness (Alternative b or g). The lifestyle of residents not dependent on timber-related employment but who frequently use the outdoors could be adversely affected by Alternative a, c, or e.

Alternatives that provide a resource mix--moderate to high levels of all resource concerns--would benefit most groups of people with little negative impact on any one specific group. Alternatives in this category include d (the Proposed Action) and f.

Existing equal opportunity emphasis on the Forest considers minorities, women, the handicapped, and older citizens in hiring practices, Forest visitor services, and the enforcement of contracts and permits. This emphasis applies to all alternatives; however, some alternatives may reduce the flexibility to achieve equal opportunity goals and/or impact some groups more than others.

In Alternative a (current direction), seasonal employees, handicapped workers, and/or older citizens from the Senior Community Service Employment Program are employed in some capacity on each District and in the Supervisor's Office of the Lolo Forest. A Youth Conservation Corps crew is maintained on one or more Districts each summer. These programs encourage women and minority employees. In addition, the Forest currently maintains a Native American Cooperative Agreement with the Confederated Salish and Kootenai Tribes. Through the agreement, short-term projects are contracted with work crews from those tribes, making it more cost efficient than hiring a longer term seasonal employee. Alternative b's philosophy encourages labor intensive practices and activities. These are usually done by seasonal employees, YCC crews and tribal crews; it is expected that these types of government programs employ more women and minorities than the private sector. The service concept stressed in Alternative d suggests that human resources programs would be utilized to the extent that the budget supports them. Alternatives like c and e that emphasize cost-efficiency and a corporate approach to management of the Forest could result im more work contracted to the private sector; this could have some impact on women and minorities who generally make up a smaller percentage of the private work force compared with government human resource programs.

Sites and facilities to accommodate handicapped visitors are currently located on each District of the Forest, offering a range of recreational experiences. The Forest is in the planning stages of developing a directory of those opportunities. Lack of emphasis on developed recreation sites in Alternatives b, d, f, and g could impact the elderly and handicapped visitor whose opportunities to enjoy dispersed types of recreation are limited. However, emphasis on service in Alternative d should expand opportunities for all persons, including the elderly and and handicapped, to use and enjoy the Forest.

Emphasis on wildlife habitat in Alternatives a and d could expand certain types of opportunities to hunt and fish with reasonable success. Lower income families dependent on big game for meat might benefit from this emphasis on big-game management.

In Alternatives a and d, the Forest is easily accessible near all Forest communities. This is particularly important to lower income groups and older citizens who may not have the resources and/or the physical ability to travel long distances. These groups may be dependent on the Forest for firewood and hunting for red meat, as well as outdoor recreation activities. The right to accessibility of the Forest implied in Alternatives c and e would provide opportunites for lower income families and older citizens to gather firewood, hunt, and recreate in a sizeable percentage of the Forest. Reduced access in Alternative b, as well as Alternatives f and g, could impact opportunites for lower income families and older citizens to use the Forest for some activities.

Attitudes, Beliefs, and Values. Plentiful supplies of wood, forage, and access for minerals create a feeling of self-sufficiency for people dependent upon those resources for a livelihood. This is a trait common among all the people of the five counties. As these market supplies decrease in Alternatives b and g, so does the sense of control. Self-sufficiency decreases and uncertainty about the future increases for these people.

Some long-time residents take it for granted that all Forest uses can be satisfied equally, despite ever-increasing demands on the resource base. These people's sense of personal satisfaction, control and self-sufficiency could decrease if the timber harvest was increased to a level that negatively impacts other resources as in Alternative c.

People who do not work in timber-related jobs but reside in timber dependent communities could be adversely affected by alternatives that significantly decrease the timber output level. Their employment may be indirectly related to the timber harvest, or their friends work in the timber industry, and they are concerned about the stable growth of their community.

Residents not living in communities significantly tied to the timber industry, and individuals placing high value on conserving the natural resources provided by the Forest would more likely have a positive sense of well being and certainty about the future with alternatives that have less emphasis on commodity outputs, provide protection of the resources, and offer more varied recreation experiences.

Alternatives that are more balanced in providing market and nonmarket resources (a, d, or f) increase the feeling of certainty in both commodity and nonmarket oriented individuals in being able to live a desired way.

Regional people, mostly from eastern Montana, seem to be more interested in the recreation opportunities provided by the Forest (Lolo National Forest Planning Records). They are most likely to favor alternatives which would protect the natural environment and provide a diversity of recreation opportunities. National interests are served in different ways. Alternatives which emphasize timber production over other values would benefit wood product consumers (Adams, Haynes, and Darr 1977). Alternatives which stress nonmarket outputs over timber production values often benefit environmental interests and consumers. As timber harvests are lowered among alternatives, the net revenues to the Treasury are progressively reduced.

Social Organization. Community cohesion includes the degree of unity and cooperation within a community, ability of residents to cope with change, and the degree to which lifestyles and values of residents are compatible.

A certain amount of conflict is inherent in implementing any alternative that is a change from the current situation. Alternatives b, c, or g have the greatest potential for disagreement between groups because they would likely be perceived as favoring one interest group to the detriment of another. However, most changes would be gradual due to budget limitations and conflict would be minimized. Some issues such as wilderness, which has become a major issue in western Montana, could be a major source of disagreement.

Land Use Patterns. This variable assesses the compatibility of proposed changes in land uses such as timber, wildlife habitat, recreation, mining, and grazing with present uses and how the uses affect the social and economic life of communities. Forest Service actions would not significantly affect county land use patterns; however, changes in Forest land use could impact community social and economic factors. The affect of changes in National Forest System land use on the social environment is discussed under lifestyles and attitudes, beliefs, and values.

Only Alternative c would increase the number of acres managed for timber, the rest would decrease from current management direction. Alternatives b, c, d, f, and g include an increase in acres proposed for wilderness over the current situation. Alternative e proposes less while Alternatives b and c are the same as the current direction. Alternatives b, d, and e include more areas for roadless recreation while Alternatives c, f, and g would have less acres set aside for roadless recreation. All alternatives include the necessary habitat protection for threatened and endangered species. Alternatives a and d increase habitat to support elk populations. Alternatives b, c, e, f, and g would not provide habitat to support the current herd.

17. Net Public Benefit and Nonpriced Benefits Addressed in the Alternatives

The overall conceptual measure of value of each of the alternatives is net public benefit. Net public benefit is summarized here as a preface to discussing those benefits that cannot be expressed in economic terms.

Net public benefit is the overall long-term value to the nation of all outputs and positive effects (called benefits) less all associated Forest inputs and negative effects (called costs) resulting from management of Lolo National Forest System lands. Priced benefits and all financial costs of management can be measured in dollar terms. Some nonpriced benefits, such as recreation visitor days, are assigned values based on the concept of the willingness of users to pay for the resource output.

However, other nonpriced benefits and some negative effects cannot be measured quantitatively or cannot be fully valued in financial terms (see Appendix B, Section IV). A goal of forest planning is to determine which alternative effectively responds to public issues while maximizing the net public benefit. The choice of the alternative that maximizes net public benefit is a subjective decision.

The principal benefits and costs relevant to making that judgement for the Lolo Forest are associated with the issues discussed in Appendix A and with legislation underlying the planning process. Section 18 details costs and benefits that can be measured in financial terms. Those benefits that cannot be quantified are discussed below. Section 19 then compares changes in economic benefits with differences in responses to issues. Because these are summary statements, a fully informed judgement of the alternatives also requires an understanding of the results displayed elsewhere in this document.

The major nonpriced benefits are described in Appendix B, Section IV C. Nonpriced benefits are not directly addressed by the alternative PNV comparisons. Some nonpriced benefits vary significantly by alternative and can be measured by physical indicators such as acres. Nonpriced outputs often result in reduced priced outputs (lower PNV). Tables II-40 and II-43 in Sections 18 and 19 show the tradeoffs between providing priced outputs and nonpriced outputs. The indicators are used to estimate the relative achievement of nonpriced resource goals among alternatives. The indicators do not fully quantify or place a value on the nonpriced benefits but they indicate differences in levels of nonpriced benefits between alternatives.

a. Major Nonpriced Benefits with Large Differences Among Alternatives

Although there are several nonpriced benefits resulting from Forest management, six were identified as major benefits on the Lolo Forest. These six correspond to issues discussed in Appendix A. The nonpriced benefits discussed in this section vary significantly by alternative.

Visual Quality. Visual quality refers to the range and distribution of the scenic aspects and perceived beauty and enjoyment of the forest environment. Differences among forest recreationists, nearby residents, and travelers in the enjoyment they would receive from the physical conditions of each alternative are real but difficult to measure. While the total numbers of recreationists preferring conditions having particular scenic qualities and the implied dollar-values of their activities have been estimated, the options available to them would vary by alternative. Wildlife and water quality are also influenced by visual management activities resulting in additional nonpriced benefits.

Inventoried acres of Retention and Partial Retention are maintained in Alternatives a, b, f and g. The preservation objective is applied to acres of wilderness and other special areas in all alternatives. Alternative d maintains approximately 74 percent of the inventoried acres. Alternatives c and e limit retention and partial retention to lands viewed from highways.

Protection of Water Quality/Fisheries Habitat. Those that benefit from increased water quality/fisheries habitat include not only recreationists, but communities using the municipal watersheds. The level of water quality is reflected in the number of catchable trout in combination with the individual stream goals for each alternative. The total forest outputs do not vary significantly between alternatives because reduced sedimentation, habitat improvement work and riparian management maintain the Forest fisheries habitat within State water quality standards. However, water quality and fisheries habitat in individual fisheries streams would vary greatly depending on the goals of the alternative. This variability depends on the type and intensity of management activities such as road construction, grazing, or timber harvest, as well as the land characteristics in the drainage such as geologic type and stream morphology. Trout indicate the number of catchable fish on the Forest.

Wilderness and Roadless Area Diversity and Quality. In order for an area to qualify as a wilderness, it must be at least 5,000 acres. In order to provide a quality recreation experience, a roadless area must be the same, at least 5,000 acres. Roadless recreation can be provided in other smaller areas, but for the purposes of Forest planning, if the area does not meet the 5,000 acre criteria, it is not included in the roadless recreation calculation. There are 776,190 acres of inventoried roadless on the Forest. Future demands for wilderness recreation would be satisfied in all alternatives. Alternatives meet roadless recreation demands except Alternatives e and f.

Recreation use is only one value of the wilderness or roadless resource. Citizens at both the local and national level plus conservation and wildlife groups have expressed the desire to have more wilderness than is needed to meet projected recreation use. Many people feel other values of wilderness include: maintaining options for future generations, maintaining native plant and animal species, and providing a research base for studying a natural undisturbed environment. Quantifying the value of a wilderness or roadless area strictly by its recreation visitor day use misses many of its important values. Wilderness benefits are specific to the Lolo Forest (not captured by other wilderness areas in the National System).

Diversity and Quality of Recreation Opportunities. The assigned value per recreation visitor day does not reflect the value of providing a diversity of recreation opportunities and settings. Diversity of experiences includes primitive, semi-primitive, roaded, and developed settings. It also includes experiences in unique settings such as wilderness, wild and scenic rivers, botanical areas, scenic areas, and historic sites. The Lolo Forest currently provides adequate recreation diversity, but two important elements of diversity are in need of attention and planned assignment now if the Forest is to meet expected use in the future. Areas available for the semi-primitive non-motorized experience are reduced as more areas are roaded. Similarly, areas which currently provide roadless elk hunting and/or trout fishing are eliminated as they are roaded.

Indicators of recreation quality and diversity are found in comparing the projected demand with the potential for each recreation type. Quality and diversity increase as the margin of potential increases over the demand.

b. Nonpriced Benefits That Differ Less Among Alternatives

Threatened and Endangered Species Habitat. Habitat for these legislatively protected species is provided at recovery levels in all alternatives.

Plant and Animal Community Diversity. Diversity is reflected in management for visual quality, water quality, threatened and endangered species, the regulated forest, recreation and wildlife habitat management, preservation of natural areas, and wilderness and roadless areas. Therefore, it is largely a broad, generic term for a wide range of output consequences that are the source of both economic and nonpriced benefits. The goal of emphasizing plant and animal diversity is maintaining gene pools, scientific research opportunities and to ameliorate insect and disease infestations.

The indicator used to describe plant and animal community diversity is the amount of acreage in each age class group. As stated in 36 CFR 219.27(g) the goal for plant and animal community diversity "...shall preserve and enhance the diversity... so that it is at least as great as that which would be expected in a natural forest...". However, the mix of age class group that would best represent the natural environment is impossible to define. If the goal is to have a regulated forest, the best distribution is approximately 10 percent nonstocked and 22 1/2 percent each of seedling/saplings, poles, immature, and mature sawtimber. As emphasis shifts towards other goals, the proportion of acres in these age classes changes in response to the goals. All alternatives provide reasonable levels of the various age classes to meet minimum diversity requirements. This results from the large acreages of wilderness/roadless available to some degree in all alternatives. The distribution, however, of these various age classes, will not be acceptable to meet old growth wildlife needs in all alternatives. For instance, in alternatives C and Max PNV (Table II-19, pp. II-59), even though nearly 500,000 acres are available in wilderness/roadless areas, only 27 percent and 30 percent, respectively, of the Forest's drainages will retain adequate amounts of old growth. Old growth wildlife species within these alternatives would be at high risk due to genetic isolation. The proposed action, alternative D, conversely provides old growth within 79 percent of the Forest's drainages.

18. Significant Differences in Economic Values Among Alternatives

This section explains tradeoffs that would occur among the quantified economic benefits and outputs. Additional tradeoffs involving outputs and benefits not quantified in economic terms by PNV together with community effects and different responses to Forest issues are explained in Section 18.

a. Differences in Present Net Values

The primary measure of economic efficiency (net priced benefits) is present net value (PNV). This is the sum of market and nonmarket priced values (timber sales, livestock grazing permits, recreation use, mineral leases, land use, power, special use, range and recreation collections) less all management costs for the 120 year planning horizon discounted at 4 percent. The PNV of the alternatives is displayed in Tables II-40, II-44, and Figure II-7. The maximum PNV Benchmark represents the maximum net return available from managing the Forest. Although it meets minimum legal requirements of managing the Forest, the PNV Benchmark is not designed to address issues.

The alternatives are ranked by present net value in Table II-40, where present net value is defined to be the difference between the discounted benefits and the discounted costs of each alternative. The second column in Table II-40 shows the differences in PNV among pairs of alternatives. These figures are estimates of the net economic values that would be foregone if a lower-ranked alternative rather than the preceeding one were selected. Because timber values are a major component of PNV, these potentially foregone values are largely due to limiting the timber program.

Table II-40: Present Net Value, Discounted Costs, and Benefits

(Million $)

Alternative/Benchmark	PNV	Change	Discounted Costs	Discounted Change	Discounted Benefits	Discounted Change
Max PNV (Benchmark)	379		1185		1564	
Alt. e	221	-158	1113	-72	1334	-230
Alt. c	206	-15	1181	68	1387	53
Alt. g	203	-3	1039	-142	1242	-45
Alt. a (Current)	176	-27	1131	92	1307	65
Alt. b	174	-2	1006	-125	1280	-27
Alt. d (Proposed)	174	0	1095	89	1269	-11
RPA (Benchmark)	152	-22	1201	106	1353	84
Alt. f	135	-17	1209	8	1334	-19
Min Lvl (Benchmark)	86	-49	101	-1108	187	-947

As the timber program and PNV decrease, costs also generally decrease. As priced benefits decrease from the alternative that emphasizes market outputs (primarily timber) to the alternative that emphasizes non-market outputs, costs also decrease. This is because the majority of the costs are associated with the timber program. The costs generally decrease because less timber is being harvested. Even when less timber is harvested, other resource goals increased costs by: 1) moving harvests into areas with high access costs, and 2) increasing mitigation costs for non-timber resources.

As stated above, PNV increases as the timber harvest level increases. The only exceptions to this are Alternatives e and g, because these alternatives have less wildlife habitat improvement and less costs associated with visually sensitive areas.

The high costs of Alternatives a and c relative to the economic values they produce are due to their emphasis on responding to issues in ways that produce relatively few values that can be expressed in numeric terms. As a consequence, some timber production activities are spread to areas of relatively low productivity and high access and operating costs. This dispersion also increases road-related mitigation expenditures to protect non-timber resources. One consequence is that timber costs per unit of timber harvested increase.

See Section 19 for a detailed discussion of the PNV tradeoff in terms of achieving nonpriced output objectives.

Table II-41 shows discounted benefits and costs by resource group. This table shows that timber and recreation values make up the largest components of the PNV values on the Lolo Forest. Most of the change in PNV among alternatives is due to changes in the net value of the timber resource. PNV declines because some cost efficient timber sales are foregone; timber benefits decline substantially more than changes in priced recreation and hunting benefits. Economic values derived from other resources are generally not as large as timber on this Forest and their variations among alternatives are relatively minor.

Table II-41: Discounted Benefits and Costs for Resource Groups ($MM)

Alternatives/ Benchmarks	Present Net Value	Discounted Benefits			Discounted Costs				
		Timber	Rec.	Range	Timber	Rds.	Rec.	Range	Other
Max PNV	379	1264	295	5	864	161	20	2	138
Alt. e	221	1034	295	5	642	140	20	2	309
Alt. c	206	1087	295	5	676	140	21	2	342
Alt. g	203	942	295	5	671	133	22	2	211
Alt. a	176	1007	295	5	648	129	21	2	331
Alt. b	174	980	295	5	620	126	22	2	336
Alt. d	174	969	295	5	609	128	22	2	334
RPA	152	1053	295	5	692	132	22	2	353
Alt. f	135	1044	295	5	698	136	21	2	352
Min Levl	86	0	187	0	0	0	4	0	97

NOTE: The direct comparison of benefits and costs by individual resource can be misleading because all costs include non-separable multiresource management costs. Timber benefits and costs are based on delivered log values.

Figure II-7 displays PNV by alternative. The maximum PNV of the Forest is $379 million as defined by the MAX PNV Benchmark. Figure II-7 shows that there are significant differences in economic values among alternatives.

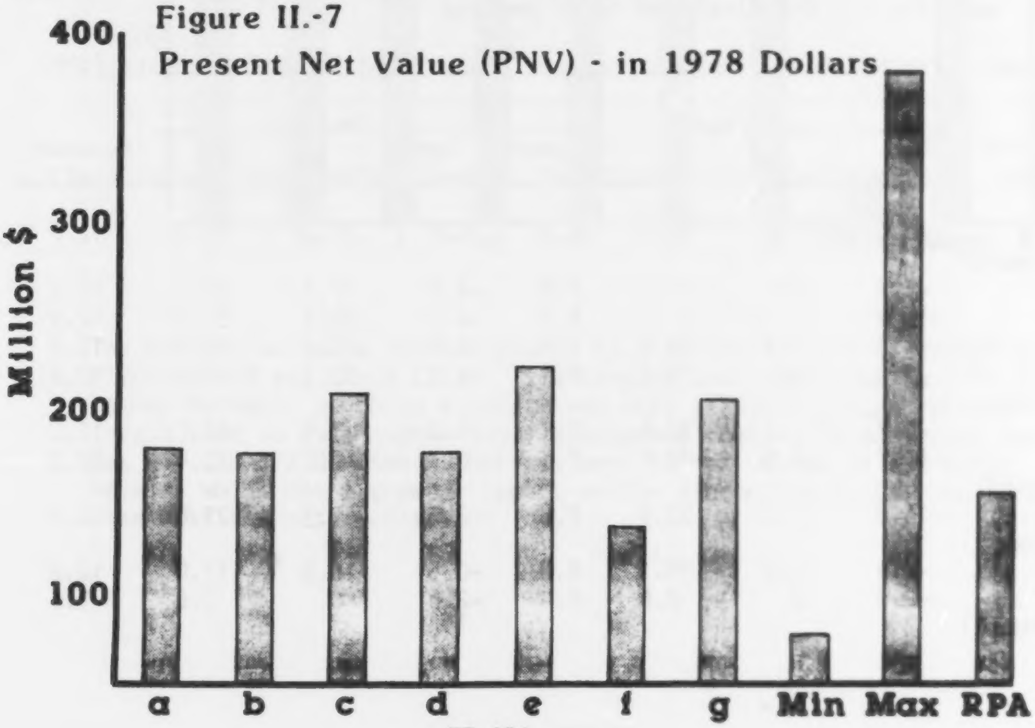


Figure II.-7

Present Net Value (PNV) - in 1978 Dollars

b. U.S. Treasury Cash Flows and Noncash Benefits

Net cash flows to the U.S. Treasury are the dollar returns to the treasury less total budget costs. Table II-42 displays the net cash flow to the U.S. Treasury for each alternative in order of declining PNV for the first and third decades. Agency expenditures exceed receipts in all alternatives in the first decade. While the benefits displayed in Table II-42 estimate the full, potential dollar returns to the U.S. Treasury *if* full charges were made, the focus here is limited to the actual net receipts collected under current laws and policies. Cash receipts include returns from timber sales, livestock grazing fees, campground fees, mineral permits, and special use fees. Timber receipts make up 95 percent of the total receipts. The variance between alternatives is primarily due to the timber harvest level. In addition, timber receipts are affected by the per unit value of timber harvested. For example, *Alternatives a* and *c* have lower timber benefits per MBF due to harvesting in less productive areas. Other returns are grazing fees, campground fees, mineral leases, and special use fees and vary from $140,000 to $160,000 per year in all alternatives.

Returns are projected to increase in all alternatives because of real timber value price increases through the fifth decade and because timber harvest levels increase through time. Net receipts increase more rapidly than costs in each decade for all alternatives. The annual returns by resource for decades 1, 3, 5, and 10 are displayed in Table II-44.

The noncash benefits are measures of the difference between the value individual resource users are willing to pay for a resource minus the fees that are collected. There are other noncash benefits provided by resources on the Lolo such as old growth and riparian values not captured by recreation valuation, but no estimates were possible to place a value on them. Table II-42 displays the value of noncash benefits for the first and third decades.

Table II-42: Average Annual Returns to the Treasury and Noncash Benefits ($MM)

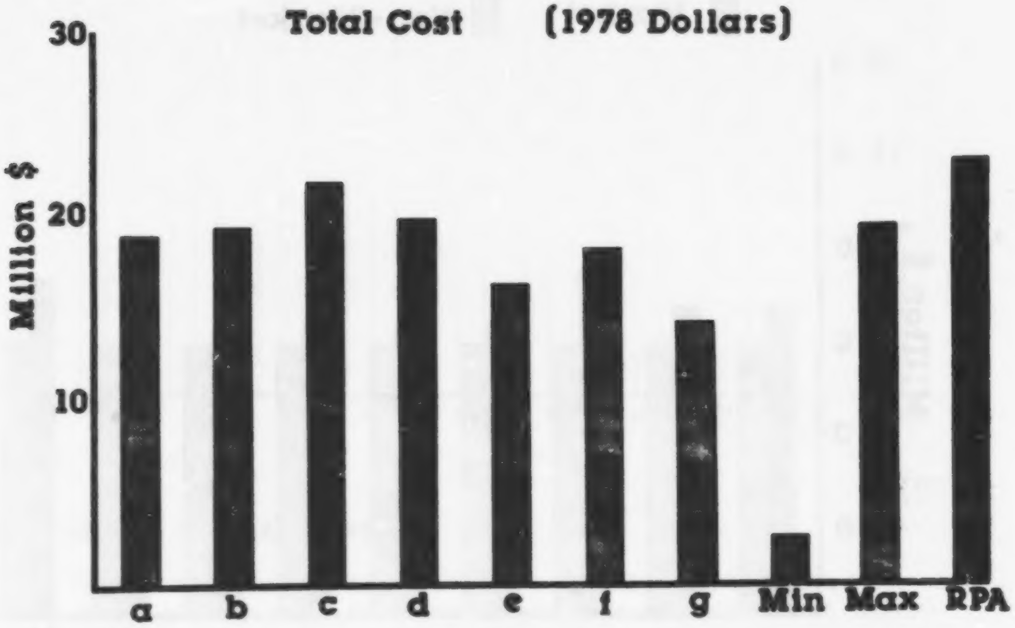
Alternative/ Benchmark	Decade 1				Decade 3			
	Net Receipts	Receipts	Costs	Noncash Benefits	Net Receipts	Receipts	Costs	Noncash Benefits
Max PNV (Benchmark)	-8.0	11.3	19.3	8.8	5.9	25.9	20.0	12.2
Alt. e	-7.2	9.0	16.2	8.8	-2.6	17.8	20.4	12.2
Alt. c	-10.4	11.2	21.6	8.8	-0.7	20.3	21.0	12.2
Alt. g	-6.6	7.4	14.0	8.8	-2.4	15.0	17.4	12.2
Alt. a (Current)	-9.2	9.5	18.7	8.8	-3.7	17.2	20.9	12.2
Alt. b	-9.7	9.7	19.4	8.8	-1.2	17.5	18.7	12.2
Alt. d (Proposed)	-10.7	9.0	19.7	8.8	-0.7	16.7	17.4	12.2
RPA (Benchmark)	-11.8	11.0	22.8	8.8	-2.5	19.3	21.8	12.2
Alt. f	-9.1	9.0	18.1	8.8	-0.5	16.5	17.0	12.2
Min Level (Benchmark)	-2.6	0	2.6	4.4	-2.6	0	2.6	3.6

c. Costs

Annual Forest Service costs for decade 1, by alternative, are displayed in Table II-44 and Figure II-8. Included in the budget is a fixed cost component. With the exception of the minimum level Benchmark, all alternatives have a first decade fixed budget cost of $7.1 million/year which includes legislatively mandated programs such as backlog reforestation, as well as general administration, fire control, and road maintenance. These fixed costs are estimated to decline to $5.4 million/year in the second and following decades, as some programs are completed or phased out. The minimum level Benchmark has a first decade fixed budget cost of $3.0 million/year and a second decade fixed budget cost of $2.6 million/year.

Figure II.-8

Decade 1 - Average Annual Forest Service Total Cost

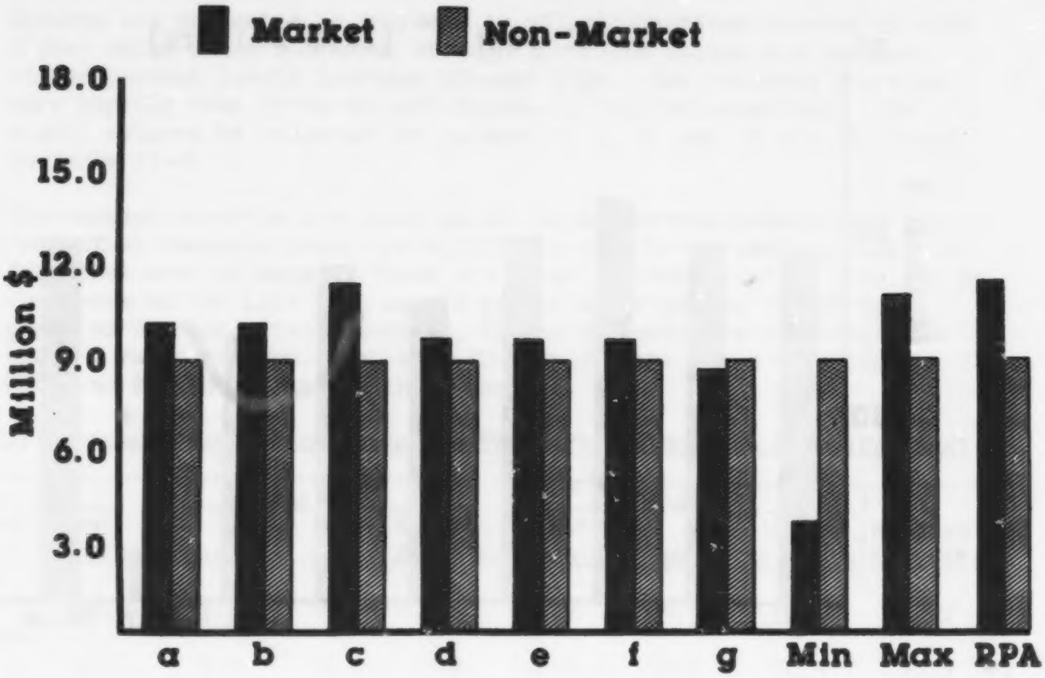


The discounted costs for 120 years, by alternative, are displayed in Figure II-10 and Table II-44. The largest cost component is tied to timber harvest, so those alternatives with relatively high harvest levels tend to have higher total discounted costs. In addition, the Max PNV and RPA Benchmarks harvest more timber volume in the early decades which has a greater impact on the discounted costs than is the case with the alternatives.

The average annual values for decade 1 by alternative are displayed in Table II-44 and Figure II-9 for two resource categories: Market and Non-Market.

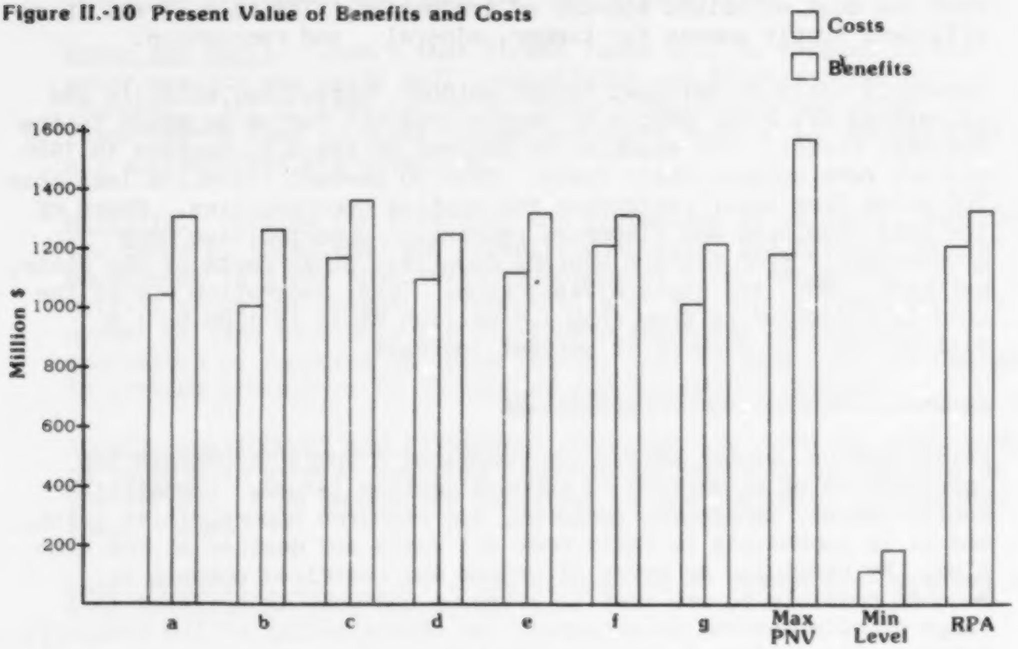
Market values are the sum of the returns to the U.S. Treasury from timber sales, livestock grazing fees, campground fees, mineral leases, and special use fees. Non-market values are the values assigned to livestock grazing and recreation use, and are willingness- to-pay values based on economic theory rather than actual dollar returns. With the exception of the minimum level run, all alternatives and runs produce more recreation potential than projected use levels. Only the amount expected to be utilized is valued; thus, the total value from recreation is the same for all alternatives.

Figure II.-9
Decade 1 - Average Annual Market and Nonmarket Values



Discounted values for 120 years are displayed along with discounted costs in Figure II-10. Since the amount of non-market benefits valued is essentially the same for all alternatives and benchmarks with the exception of the Minimum Level, the variation in discounted values among alternatives and benchmarks is almost entirely a function of the volume of timber harvested. The Max PNV Benchmark in particular develops a large discounted benefit as a result of harvesting a large volume of timber in the early decades.

Figure II.-10 Present Value of Benefits and Costs



19. Major Tradeoffs Among Alternatives

Section 19 provides additional information to help identify the alternative or alternatives that come closest to maximizing net public benefit while meeting legal and environmental requirements and responding reasonably, equitably, and effectively to the issues, concerns, and opportunities. This additional information describes the tradeoffs that would occur among the net quantified benefits described in Section 18 and the nonpriced benefits described in Section 17. Except for the quantified economic benefits, the extent to which each alternative addresses issues, concerns, and opportunities is based on professional judgement.

a. National, Regional, and Local Demand Outlook

To provide a framework for assessing responses to issues, concerns, and opportunities, the long-term resource demands and needs of the nation, region, and local communities are reviewed briefly.

The RPA projects total national demands to rise for all outputs of National Forests: timber, minerals, forage, outdoor recreation opportunities, and wildlife experiences, including wilderness, water supply, and many amenity uses of forest and range lands. There is also a strong demand to protect and enhance the quality of the environment while meeting these demands. The markets into which commodities produced on the National Forests flow are generally regional or national. The nation benefits when supplies are provided from the most efficient sources of production. The Lolo Forest is an efficient supply source for timber, minerals, and recreation.

Generally users of National Forest outdoor recreation, wildlife and wilderness are local people or people from the region adjacent to the National Forest. For example, 88 percent of the U.S. hunters in 1980 did not hunt outside their State. Over 90 percent travelled less than 100 miles from their residences for hunting opportunities. Users of the Lolo developed and dispersed recreation opportunities come predominantly from western Montana counties, other parts of the State, northern Idaho, and eastern Washington. Total recreation use of the Lolo is projected to grow from 1.4 million RVD's in 1980 to 1.9 million RVD's in 2030--a 36 percent increase.

b. Issues, Concerns, and Opportunities

Relationships between priced and nonpriced outputs illustrate the interactions of attempting to resolve various issues. Competitive public issues, management concerns, and resource opportunities exist, and it is impossible to fully meet all wants and desires at the same time. By examining an array of priced and nonpriced outputs it becomes possible to see what is given up and what is achieved as a range of alternatives is explored. An understanding of the tradeoffs between alternatives is required to help decisionmakers decide which alternative maximizes net public benefit. The mixes of priced and nonpriced outputs resulting from each alternative are a direct result of the varied attempts to resolve the public issues discussed in Chapter I.

Appendix A fully discusses each of the issues, concerns, and opportunities. Public issues and management concerns were grouped into the following categories and the indicator of responsiveness for each category is as follows:

Range. The overall issue deals with the compatability of livestock grazing on the Forest with other resource programs. There are only minor changes among alternatives in livestock forage outputs.

Recreation. The public's expressed needs for recreation must be put in perspective by examining the appropriate balance of recreation uses with other resources and funding, the need for a variety of recreation opportunitites, and the importance of quality recreation experience to users. The potential for dispersed recreation, the acreage of wilderness and roadless management, and miles of road on the Forest are all indicators of response to recreation issues.

Timber. These concerns are related to an overall desire to manage timber to help sustain productivity, assist dependent industries, increase utilization, and be cost effective in balance with other resources on the Forest. Indicators of response to these issues are the acres of suitable timber land, the allowable sale quantity, and the long-term sustained yield for each alternative.

Water and Soils. Insure that Forest lands will be managed so that water quality and basic soil productivity can be maintained or improved. All alternatives must protect basic soil and water resources by law, so these issues are taken care of in the way that all alternatives are developed.

Wildlife. Provide for diversity and protection of wildlife, consider the needs of threatened and endangered species, and provide habitat management in a way that takes advantage of other management activities on the Forest. Productivity of elk winter range and the amount of land available for old-growth dependent species are indicators of response to these issues. All alternatives are designed to provide protection to threatened and endangered species.

Aquatic Environment and Fisheries. Consider how riparian areas should be managed in general and what fish habitat needs to be improved on the Forest. Fish population potential is the indicator of response to these issues.

Land, Minerals, and Fire. These categories of issues are impacted in similar ways by all alternatives.

Roads. Establish adequate road standards and determine how much open/closed roading is needed on the Forest to accomplish a variety of resource objectives. Road standards are constant for all alternatives. The total road system needed for management is an indicator of response to this issue.

Social/Economic. Consider how the impacts of land assignment on local communities and the nation will be incorporated into proposed land management. There are several indicators of the impacts of management, including present net value (PNV), changes in local income and employment, the annual budget needed to implement, and annual returns to the U.S. Treasury.

Visual Quality Objective (VQO). Concerns about the size of areas where landscape would be altered, projected length of time the changes would be visible, reasonableness of change, and preservation of scenic quality, all in light of social and economic tradeoffs for VQO. The indicator of this issue is the proportion of visually sensitive areas maintained in each alternative.

Wilderness. Wilderness is a resource to be considered in the planning process. Acreage of land assigned to wilderness management is an indicator of response to this issue.

c. Tradeoffs Among Alternatives

The following table and discussion identify the tradeoffs between monetary goals (returns to the Treasury and PNV) and addressing the issues. The descriptions of tradeoffs proceed from the alternatives with the highest PNV to the lowest. The ranking of output levels for each of the alternatives is included in Table II-43, and the narrative discusses tradeoffs associated with each alternative and benchmark.

In general the amount of wilderness, roadless, old growth, visual quality, and potential fish population increase as PNV and the level of timber production decrease. Benchmarks maximize the production of a single resource at the expense of other resources and have relatively high PNV's.

As more wilderness and roadless areas are designated, it affects PNV in two ways: 1) the current and long-range timber harvest (LTSY) are reduced due to the reduced production base, and 2) to some extent, harvest is forced into stands with less valuable timber and higher access costs. As the area managed for visual quality increases it also affects PNV in two ways: 1) harvest costs increase, and 2) the amount of volume removed in the first entry is decreased, decreasing benefits. Water quality/fisheries habitat is protected by restricting the types of management in riparian areas. This has a significant effect on PNV because in order to maintain a fairly high timber cut the harvest is forced into areas with higher access costs and lower timber values.

In Table II-43 the indicators identified above are used to show the degree of response of each alternative to these issues, concerns, and opportunities. The following section discusses tradeoffs between alternatives in more detail.

Table II-43: Alternatives and Benchmarks Ranked by PNV. Selected Priced and Nonpriced Outputs.

	Benchmark	Alternatives							Benchmarks	
	MAX PNV	e	c	g	a	b	d	f	RPA RUN	MIN LVL
Present Net Value (MM$)	379	221 (1)	206 (2)	203 (3)	176 (4)	174 (5)	174 (6)	135 (7)	152	86
Reduction in PNV from Max PNV Benchmark (MM$)	0	158 (7)	173 (6)	176 (5)	203 (4)	205 (3)	205 (3)	244 (1)	227	293
Wilderness Management (M Acre)	130	140 (7)	352 (4)	916 (1)	352 (4)	352 (4)	363 (3)	539 (2)	342	345
Roadless Management (M Acre)	95	300 (2)	145 (5)	21 (7)	165 (4)	379 (1)	181 (3)	77 (6)	228	375
Dispersed Recreation Potential (MRVD's/Yr.)	1634	2028 (6)	3522 (3)	2238 (5)	3627 (2)	3693 (1)	3311 (4)	1987 (7)	3204	955
Total Rds. Needed for Management (Miles)	10468	11588 (3)	12592 (2)	11108 (5)	13175 (1)	10569 (7)	11109 (4)	10863 (6)	11022	0
Change in Area Income Associated with Forest Activities (MM$/Yr.)	+6.2	+5.7 (2)	+7.9 (1)	+0.9 (7)	+4.7 (5)	+3.7 (6)	+5.6 (3)	+5.4 (4)	+8.1	-26.0
Changes in Person-Year Area Employment (Jobs/Yr.)	+414	+358 (2)	+527 (1)	+35 (7)	+316 (5)	+246 (6)	+344 (3)	+330 (4)	+544	-2400
Elk Winter Range Productivity (% of Existing)	83	73 (5)	85 (3)	64 (7)	100 (2)	75 (4)	129 (1)	67 (6)	112	105
Diversity--Land for Old Growth Dependent Species (M Acre)	440	464 (7)	595 (4)	923 (1)	521 (6)	853 (2)	595 (4)	661 (3)	671	720

( ) Denotes ranking among alternatives for this output.

Table II-43 (continued)

	Benchmark								Benchmarks	
	MAX	Alternatives							RPA	MIN
	PNV	e	c	g	a	b	d	f	RUN	LVL
Aquatic Habitat--Fish Population Potential (M Nos. > 6")	665	966 (3)	823 (7)	970 (1)	905 (5)	868 (6)	964 (4)	968 (2)	893	856
Visual Quality (% of Inventoried Visually Sensitive Areas Maintained)	28	52 (7)	57 (5)	56 (6)	90 (1)	89 (2)	71 (4)	73 (3)	60	100
Land Suitable for Timber (M Acre)	1320	1326 (3)	1420 (1)	956 (7)	1402 (2)	1099 (6)	1239 (4)	1204 (5)	1207	0
Allowable Sale Quantity (MMBF/Yr.)	123	107 (3)	130 (1)	92 (7)	111 (2)	104 (6)	107 (3)	107 (3)	124	0
Long-Term Sustained Yield (MMBF/Yr.)	240	191 (3)	211 (1)	174 (5)	201 (2)	173 (6)	178 (4)	171 (7)	176	0
Annual Budget to Implement (MM$)	19.3	16.2 (6)	21.6 (1)	14.0 (7)	18.7 (4)	19.4 (3)	19.7 (2)	18.1 (5)	22.8	2.6
Annual Returns to Treasury (MM$)	10.4	9.6 (4)	11.2 (1)	8.4 (7)	10.0 (2)	10.0 (2)	9.6 (4)	9.6 (4)	11.2	3.6

( ) Denotes ranking among alternatives for this output.

The following section discusses the major economic tradeoffs among the alternatives and selected benchmarks and issues addressed by each alternative. The alternatives are listed in order of decreasing PNV. For a more detailed discussion of resource constraints, see Appendix B.

Maximize Present Net Value

The Max PNV Benchmark was used to provide an indication of the tradeoffs necessary to achieve a high level of PNV. This run achieves the highest PNV ($379 million) and associated employment levels at a high environmental cost as reflected by having the lowest level of old-growth and diversity acres, visually sensitive area maintained, and fish population potential of all alternatives and benchmarks. Roadless management is also at very low levels, and only existing wilderness is maintained as wilderness. Wilderness proposals identified in the alternative areas are made available for timber harvest. This and all other alternatives and benchmarks have an ending inventory constraint which assures that timber volume will remain at the end of the analysis period. The first three decades are constrained to limit variation in timber volume between an increase of 25 percent and a decrease of 10 percent. From the 4th decade through the 12th, the variation was limited to a plus or minus change of 25 percent. Allowing this variation, rather than a constrained even flow of timber volume, results in a higher PNV for the benchmark. This is the only alternative or benchmark without the nondeclining even flow constraint. While the long-term sustained yield is the highest at 240 MMBF/year, the combined wilderness and roadless acres are the lowest of any alternative or benchmark and the potential for dispersed recreation is also at the lowest level with the exception of the Minimum Level Benchmark. Compared to the alternatives, the acreage of land determined to be suitable for timber harvest is at the fourth highest level, and the amount of roads needed for management is at the lowest level. Both of these factors indicate that the constraints used to protect multiple resource values and provide for an even flow of timber necessitate an increase in both the amount of land and roads needed for timber management. This benchmark has an allowable sale quantity that is surpassed by one alternative (c). The increase in both local income and employment is also one of the highest, ranking only behind Alternative c. Elk forage potential, at 83 percent, is only slightly less than the 85 percent potential of Alternative c, which is the third highest of all alternatives.

Alternative e

Alternative e is a modification of Alternative d and is designed to respond to the issue of roadless management for the inventoried roadless areas. Only legislated wilderness areas are maintained as wilderness. All other roadless areas, including the proposed wilderness areas under Alternative d, are made available for timber harvest. As a result, it is easier to maintain an even flow of timber than it would be under alternatives with greater amounts of wilderness, and a relatively high present net value. Alternative e has the highest PNV of any alternative. All areas, except those assigned to wilderness in Alternative d, are managed in the same manner. The output differences between Alternatives d and e can be primarily attributed to this difference in wilderness assignment. Both visual quality and elk winter forage are reduced relative to the proposed action with the acreage of roadless and wilderness management at the lowest level of any alternative. The first decade budget at $16.2 million is the second lowest of all alternatives, which is partly a result of the fact that with a larger land area to choose from there is less road construction necessary in the first decade. Total discounted benefits for Alternative e are $1,334 million, the fifth highest of any alternative. Discounted costs are $1,113 million and the net result is that the PNV of $221 million is the highest of any alternative. The change in area income (+$5.7 million/year) and the increase in area employment (+358 jobs/year) are both the second highest of any alternative, lower only than Alternative c which also emphasizes high commodity outputs. Annual returns to the Treasury of $9.0 million are the fourth highest of any alternative. The amount of land available for old-growth dependent species is the lowest of any alternative, and the proportion of visually sensitive areas maintained is the lowest of any alternative. The potential for dispersed recreation is only slightly higher than Alternative f, which is the lowest of all alternatives. Both the allowable sale quantity and long-term sustained yield are the third highest of the alternatives. Fish habitat potential is at a relatively high level, very close to the highest level achieved in Alternative g. The reduction of PNV from the Max PNV with this alternative is $158 million. Much of the reduction in PNV relative to the Max PNV Benchmark is a result of reduced flexibility in scheduling timber harvests; the Max PNV Benchmark has no nondeclining even flow constraint.

Alternative c

The emphasis of this alternative is high commodity production. The reduction in PNV from the Max PNV ($173 million) is less than all but one other alternative, e, principally because the large land base suitable for timber management allows more flexibility in scheduling harvests. The emphasis on commodity outputs, primarily timber, requires a high budget, the highest of all alternatives at $21.6 million, but the change in area income and employment is also the highest of all alternatives at +$7.9 million/year and +527 jobs/year respectively. Returns to the Treasury, which are highly influenced by timber harvests, are the highest of all alternatives at $11.2 million/year, and the timber output of this alternative is the highest of all alternatives. Higher timber outputs come at the expense of a lowered level of protection for inventoried visually sensitive areas, which is at the lowest level of all alternatives. Elk winter range productivity potential is at 85 percent due to the relatively high level of timber harvest that had an impact on cover/forage ratios. The amount of land available for old-growth dependent species is reduced because of the timber harvest emphasis, resulting in 27 percent of the drainages not having an adequate level of old-growth. Constraints were required to assign the 94,000 acres of old-growth included in the alternative. In addition, constraints were required as in all alternatives to maintain the visual quality along the major Interstate 90 travel corridor. This results in higher timber harvest costs because of the more expensive methods necessary to reduce visual impacts. The higher timber outputs also require the highest level of road construction costs of all alternatives during the first decade, at $5.2 million/year. All the development activities have an impact on expected fish populations since Alternative c has the lowest fish population potential of all alternatives. Both the first decade allowable sale quantity and the long-term benefits at $1,387 million are the highest of any alternative. The discounted total costs, at $1,181, are the second highest of any alternative, resulting in a PNV of $206 million. Thus, Alternative c is the alternative that shows the effects of extremes, with timber harvest levels, returns to the Treasury, community jobs and income, and PNV on the positive side; budget to implement, required road construction, visual quality, fish population potential, old-growth habitat and elk forage on the negative side. Wilderness acreage is the same as Alternatives a and b and roadless management is the fifth highest of all alternatives. The potential for dispersed recreation is the third highest of the alternatives, 6 percent higher than the potential of the proposed action, Alternative d.

Alternative g

Alternative g is designed to respond to the issue of roadless management for inventoried roadless areas. All inventoried roadless areas are assigned to wilderness management; thus, this alternative has 916,000 acres of wilderness, the highest wilderness acreage of all alternatives or benchmarks. It also has the lowest acreage of roadless management, since almost all roadless areas are assigned to wilderness management. With so much area removed from timber harvest, it was necessary to constrain a floor on timber harvest to maintain a first decade harvest level of 90 MMBF/year, which is approximately equal to current levels. Without this constraint, the alternative would have an adverse impact on community stability. As it now stands, Alternative g has the smallest increase of any alternative in area income at +$0.9 million/year and area jobs at +35/year. Returns to the Treasury at $7.4 million/year are also the lowest of all alternatives. The amount of land available for old-growth habitat is the highest of all alternatives. Fish habitat is well protected in this alternative with such a large area removed from commodity production. The impact of wilderness on elk winter range productivity is evident by productivity at 64 percent of the current level, the lowest of any alternative. It is necessary to have vegetative manipulation in winter range areas in order to increase productivity on winter range. The present value of benefits for this alternative at $1,242 million is 21 percent below Max PNV and the lowest of all alternatives. The present value of costs at $1,039 million is 12 percent below Max PNV and also the lowest of all alternatives. Although benefits and costs are both at low levels, the Present Net Value is third highest after Max PNV at $203 million. The reduction of PNV of this alternative relative to Max PNV is $176 million. The land base suitable for timber production is the lowest of all alternatives at 956,000 acres and the long-term sustained yield is only 3 MMBF/year higher than the lowest of all alternatives. The proportion of visually sensitive areas maintained is relatively low at 56 percent, the next to lowest of all alternatives. Both the dispersed recreation potential and the total mileage of roads needed for management are the fifth highest of all alternatives. The relatively low road mileage limits the amount of road-oriented recreation that is available. Similar to Alternative c, this alternative is also an example of the effects of extreme positions on both commodity outputs and nonmarket resource outputs. While this alternative has the highest levels of wilderness acreage, fish population potential, and old-growth habitat of any alternative, it also has the lowest level of elk forage productivity, allowable sale quantity, income and jobs for local communities, and annual budget requirements of $14.0 million/year.

Alternative a

Alternative a continues direction from the existing Forest Multiple-Use Plan (1972) and planning unit plans. It provides a relatively high level of market resources with high visual management and elk winter range productivity. The elk winter range productivity level of this alternative is considered a base from which to compare other alternatives; thus, this alternative is at 100 percent of the current productivity level, the second highest of any alternative. Alternative a assumes that total wilderness will be at 352,000 acres which is the total of both existing and proposed wilderness. This level of wilderness is the next to the lowest of all alternatives, and the roadless acreage is 165,000 acres, fourth from the lowest of all alternatives. Road construction under this alternative is expected to be the third highest of all alternatives in the first decade, $4.6 million/year, and the total mileage needed for management is higher than any other alternative with 13,175 miles. Expected livestock forage use for this and all other alternatives is limited by potential forage production. Potential RVD's are available in excess of projected use in all alternatives, in all decades. The potential for dispersed recreation is the second highest of all alternatives in Alternative a. The reduction in PNV with Alternative a, relative to the Maximum PNV Benchmark, is $203 million. The PNV of this alternative is the fourth highest of the alternatives and is within 2 percent of the PNV for Alternatives b and d, so these three alternative are essentially equal relative to the PNV. Annual returns to the Treasury are the third highest of all alternatives in the first decade at $9.5 million/year. The annual budget required to implement this alternative is $18.7 million, the fourth highest of all alternatives. One objective of this alternative is to protect the visually sensitive areas, and 90 percent of such areas are protected, the highest percentage of any alternative. Fish population potential is the fifth highest at 905,000. In terms of economic impacts on local communities, this alternative is roughly midway between Alternatives b and d, with additional income estimated at $4.7 million/year and 316 jobs/year above the current level. With the exception of Alternative c, this alternative has the largest land area assigned to timber management, 1,402 M acres, but the fourth highest level of discounted timber costs. This alternative also has the second highest level of allowable sale quantity and long-term sustained yield of any alternative, meeting the objective of relatively high commodity outputs. The 521,000 acres of land assigned to old-growth dependent species in Alternative a is the lowest level with the exception of Alternative e.

Alternative b

Alternative b has a strong environmental emphasis with both roadless and wilderness acreage increased compared to the Max PNV Benchmark. This alternative has the highest acreage assigned to roadless use of all alternatives. The reduction in PNV of this alternative, at $205 million, is similar to Alternatives a and d. The aquatic habitat benefits from the relatively low level of road building in the riparian zone and timber harvest activities are constrained to meet visual quality objectives. The total mileage of roads needed for management is the least of any alternative, and has the lowest discounted cost of road construction. Eighty-nine percent of the visually sensitive areas is maintained, which is the second highest proportion of any alternative. Although the low level of road building in the riparian zone is beneficial to the aquatic habitat, the potential fish population is relatively low because this alternative does not emphasize fish habitat improvement which other alternatives do, such as Alternative d. The total of roadless and wilderness management is at the second highest level of all alternatives and leads to the highest potential for dispersed recreation.

The amount of land suitable for timber harvest is lower than all alternatives with the exception of Alternative g. In addition, both the allowable sale quantity and the long-term sustained yield are at the next to lowest level of all alternatives. Economic impacts are tied primarily to harvest levels and both the $3.7 million/year and 246 additional jobs/year compared to the current situation are at the lowest level with the exception of Alternative g. There is a relatively large unregulated timber component associated with timber harvest that increases returns to the Treasury. Returns to the Treasury are estimated at $9.7 million, which is greater than all alternatives except for Alternative c. The amount of land available for old growth dependent species is higher than all alternatives except for Alternative g. The productivity of elk winter range is relatively low (at 75 percent) because of the reduced level of habitat manipulation through timber harvest and habitat burning. The annual budget to implement this alternative is $19.4 million, approximately the same as Alternative d. Total discounted costs, $1,006 million, are the lowest of any alternative, but the discounted revenues are fifth highest, $1,280 million. The PNV of $174 million puts Alternative b at the same level as both Alternatives a and d. Although the base harvest schedule drops relative to Alternative a, the PNV changes very little, indicating that the timber that is deleted is not economical. An even timber flow and ending inventory constraint are used in this and all other alternatives.

Alternative d

This alternative is the proposed action for the Forest. The objective of this alternative is to balance commodity production and environmental protection. It provides for output levels of resources such as timber, range, recreation, wildlife and wilderness that support rather than impact base employment, income, and job distribution in local communities. Increasing big-game winter forage is also a significant objective. The reduction in PNV of this alternative relative to Max PNV is $205 million, the same as Alternative b. Unlike Alternative b, this alternative accomplishes a more balanced situation among the various forest resources. Elk winter forage at 129 percent of existing production would have the potential to allow increased elk numbers over the current situation. This is the highest level of elk forage produced by any alternative, which results in higher timber costs on winter range due to higher proportions of shelterwood harvest systems. There is a reduction in the proportion of visually sensitive areas maintained (to 71 percent) which is the fourth highest of the alternatives. Wilderness areas in this alternative include the same areas as Alternatives a, b and c plus an additional 11,670 acres in Lolo Creek and Irish Basin. A total of 363,000 acres is assigned to wilderness management, which is the third highest of all alternatives. Areas assigned to roadless management are selected to provide roadless recreation throughout the Forest. There are an additional 103,000 acres of roadless management compared to the Max PNV, which brings the total roadless management to 181,000 acres, the third highest of the alternatives. Adequate levels of old-growth habitat are maintained in 79 percent of the drainages through the addition of 44,000 acres of old-growth management areas. The total area of old-growth management for this alternative is 595,000 acres. The level of timber harvest and associated road construction is restricted in riparian areas, which leads to both higher costs and higher levels of aquatic habitat protection. Compared to the current action, the level of timber harvest is approximately the same. The total mileage of roads needed for management is the fourth highest of all alternatives and the same as Alternative g. The discounted costs of road construction are approximately the same as Alternatives a and b, which have the lowest road costs of all alternatives. The combination of a moderate level of road construction and riparian habitat improvement projects results in a potential fish population of 964,000 which is only 0.6 percent different than the highest population potential of Alternative g. The change in area income associated with Forest activities is an increase of $5.6 million, only slightly less than Alternative e, which is the second highest of all alternatives. The change in area employment is the third highest of all alternatives as is the level of allowable sale quantity. This alternative is the next to lowest in terms of both total discounted benefits and discounted costs.

RPA Run

This run was an alternative considered but eliminated from further analysis because a departure from even flow was necessary, as well as significant environmental and economic impacts. Outputs were assigned by the Region. The departure necessary to meet the RPA timber objective is expensive in terms of PNV, ranking second from the lowest, although employment is second only to the Max PNV Benchmark. This alternative also has high levels of roadless management and elk winter range productivity. Visual quality protection and aquatic habitat are at low levels. The reduction in PNV of this run relative to Max PNV is $227 million, greater than any other alternative or benchmark except for Minimum Level. The impacts on the community are higher than any other alternative with an assumed increase in community income of $8.1 million/year and an additional 544 jobs/year relative to the current level of harvest from the Lolo. Sixty percent of the visually sensitive areas is maintained in this alternative. Fish population potential of this alternative is between the levels of Alternatives a and b. The annual budget required to implement is estimated at $22.8 million, which is higher than any alternative or benchmark. The annual returns to the Treasury are almost as high as Alternative c, which is the highest of all alternatives.

Alternative f

Alternative f is a modification of Alternative d that is designed to respond to the issue of roadless management for inventoried roadless areas. The change in assignments between this alternative and Alternative d is in the wilderness acreage. This alternative assigns the inventoried roadless areas to wilderness that were recommended by public interest groups advocating wilderness during the public review process. The total area assigned to wilderness in this alternative is the second highest, at 539,000 acres. Only Alternative g which assigned all roadless areas to wilderness has a larger wilderness component. Alternatives f and g are also similar in that they have the lowest levels of roadless management since a large proportion of roadless areas went to wilderness. In terms of dispersed recreation potential, Alternative f has the lowest level of all alternatives due to the lack of road-orientated opportunities. Total roads needed for management is next to the lowest, but the total discounted costs are the highest of all alternatives at $1,209 million. This indicates that with less land area to choose from for timber harvest, it is necessary to go to more expensive areas if timber volume is maintained close to the current level. In Alternative f the first decade harvest volume is held to at least 107 MMBF/year which is the same as Alternatives d and e. Because changes in area income and jobs associated with forest activities are primarily influenced by harvest volume, those factors are essentially the same in Alternatives d, e and f, at a level lower only than Alternative c. Productivity of elk winter range at 67 percent is higher only than Alternative g. High levels of roadless and wilderness which preclude habitat manipulation for wildlife have an impact on the winter range potential of these alternatives. The amount of land suitable for timber management is very similar to Alternative d, as is the proportion of visually sensitive areas that is maintained. The amount of land for old-growth dependent species is exceeded only by Alternatives h and g, while the fish population potential is exceeded only by Alternative g. The annual budget required to implement this alternative is relatively low at $18.1 million, the fifth highest, and the annual returns to the Treasury are the same as Alternatives d and e, $9.0 million. Alternative f has a high level of wilderness and many environmental outputs, while at the same time maintaining a timber output level that is exceeded by only two alternatives. However, there is a cost associated with this alternative in that the PNV of $135 million is the lowest of all alternatives, and the reduction in PNV from the Max PNV Benchmark is also the most extreme of all alternatives at $244 million.

Min Level

As the name indicates, this benchmark has the lowest PNV and employment outlook. This benchmark assumes that the Forest would cease all commercial operations, so any output associated with these operations will be very low. Environmental outputs, such as visual quality protection, roadless management, and old-growth species diversity, are at very high levels. The reduction in PNV associated with this benchmark relative to the Max PNV Benchmark is $293 million. The present value of costs to implement is the lowest of all alternatives or benchmarks at $101 million. Once existing contracts expire, there would be no further returns to the Treasury and all community impacts for job and income would be negative relative to the current level since timber harvest and all other income-producing resources would drop to zero.

Table II-44: Average Annual Total Resource Production by Alternative

Resource Production by Alternative and Selected Benchmark 1/

Output/Activity	Decade*	Alternative							MAX PNV	MIN LEV	RPA RUN
		a	b	c	d	e	f	g			
Dispersed Recreation Potential (MRVD's/YR)	1 -12	3627	3693	3522	2017	2028	1987	2238	1634	955	3204
Developed Recreation Potential (MRVD's/YR)	1-12	405	405	405	405	405	405	405	405	145	405
Recreation Potential (MRVD'S/YR)											
-Type I	1-12	339	531	359	498	454	504	651	122	482	416
-Type II	1-12	657	1023	620	413	392	402	503	430	284	747
-Type III-IV	1-12	2631	2139	2543	1106	1182	1076	1084	1082	189	2041
Expected Recreation Use (MRVD's/YR)											
-Type I	1	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7
	3	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
	5	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
	10	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2	22.2
-Type II	1	323	323	323	323	323	323	323	323	284	323
	3	372	372	372	372	372	372	372	372	239	372
	5	430	430	430	430	430	430	430	430	203	430
	10	430	430	430	430	430	430	430	430	203	430
-Type III-IV	1	814	814	814	814	814	814	814	814	189	814
	3	982	982	982	982	982	982	982	982	95	982
	5	1084	1084	1084	1084	1084	1084	1084	1084	47	1084
	10	1084	1084	1084	1084	1084	1084	1084	1084	47	1084
-Type V	1	353	353	353	353	353	353	353	353	145	353
	3	375	375	375	375	375	375	375	375	0	375
	5	405	405	405	405	405	405	405	405	0	405
	10	405	405	405	405	405	405	405	405	0	405
Potential Livestock Forage (MAUM's/YR)	1-12	13.8	15.1	16.8	14.3	12.4	13.3	11.3	15.9	0.5	13.0
Expected Livestock Forage Use (MAUM's/YR)	1	13.8	10.6	11.5	14.0	13.1	13.5	12.6	14.7	12.8	13.0
	3	13.8	15.1	16.1	14.3	12.4	13.3	11.3	15.9	0.5	13.0
	5	13.8	15.1	16.8	14.3	12.4	13.3	11.3	15.9	0.5	13.0
	10	13.8	15.1	16.8	14.3	12.4	13.3	11.3	15.9	0.5	13.0
Wilderness Managment (M-AC)	1-12	352	352	352	363	140	539	916	130	345	342
Roadless Managment (M-AC)	1-12	165	379	145	181	300	77	21	95	375	228

(footnotes following)

Table II-44 (continued): Average Annual Total Resource Production by Alternative

Resource Production by Alternative and Selected Benchmark 1/

Output/Activity	Decade*	Alternative							MAX PNV	MIN LEV	RPA RUN
		a	b	c	d	e	f	g			
Timber											
-Land Suitable for Timber (M-AC)	1-12	1402	1099	1420	1239	1326	1204	956	1320	0	1207
-Allowable Sale Quantity (MMBF/YR)	1	111	104	130	107	107	107	90	123	0	124
	3	133	125	156	131	140	129	120	193	0	162
	5	133	125	156	131	140	129	126	234	0	202
	10	133	125	156	131	140	129	126	181	0	117
-Allowable Sale Quantity (MMCF/YR)	1	31	29	36	29	30	30	25	34	0	34
	3	37	35	43	36	39	36	33	54	0	45
	5	37	35	43	36	39	36	35	65	0	56
	10	37	35	43	36	39	36	35	50	0	33
-Timber Harvest Clearcut (AC/YR)	1	7600	6500	8400	3700	3700	3700	3700	3700	0	3500
	3	5053	5214	7267	5140	4759	5149	5728	7113	0	5118
	5	4693	4385	6485	7766	7508	6796	6916	8200	0	8000
	10	2789	2579	3701	5737	5277	1439	1469	5304	0	4142
-Timber Harvest-Shelterwood (AC/YR)	1	8341	7342	8494	11594	12672	11579	9203	12625	0	7814
	3	11863	3253	4767	11230	15691	13427	12156	25031	0	14055
	5	16992	16657	12410	11300	9085	6982	7458	19966	0	6606
	10	25444	15861	4899	9270	6644	6400	6567	9752	0	5347
-Timber Harvest-Commercial Thin (AC/YR)	1	0	1100	200	200	3022	6578	1027	8261	0	2476
	3	1900	11500	6700	0	6433	2182	416	338	0	2476
	5	5300	6800	6900	0	1768	3539	532	10371	0	5871
	10	11800	11500	13500	5973	13665	14170	5315	17706	0	2976
-Timber Harvest-Selection (AC/YR)	1	0	36	30	1619	0	0	0	0	0	1059
	3	9557	69	1341	4307	7545	7250	1865	0	0	1059
	5	52	36	30	1619	0	0	0	0	0	4439
	10	0	36	30	1619	0	0	0	0	0	1059
-Unregulated Volume (MMBF)	1-12	7	17	9	15	15	15	12	18	0	13
-Unregulated Volume (MMCF)	1-12	2	5	3	4	4	4	3	5	0	4
-Long-Term Sustained Yield (MMBF)	1-12	201	173	211	178	191	171	174	240	0	176
-Long-Term Sustained Yield (MMCF)	1-12	56	48	59	49	53	48	48	67	0	49

(footnotes following)

Table II-44 (continued): Average Annual Total Resource Production by Alternative

Resource Production by Alternative and Selected Benchmark 1/

Output/Activity	Decade*	Alternative							MAX PNV	MIN LEV	RPA RUN
		a	b	c	d	e	f	g			
-Timber Stand Improvement (AC/YR)	1	3998	3239	4659	773	1427	1493	923	2025	0	2476
	3	3998	3239	4659	773	1427	1493	923	4103	0	2476
	5	4618	5198	10451	819	1127	2931	3909	6919	0	5871
	10	2252	3408	7095	744	923	6744	5072	125	0	2976
-Reforestation (AC/YR)	1	15713	13878	16922	8846	5370	4597	7210	5425	0	11569
	3	17372	6512	13375	9002	7742	8853	10781	17253	0	19850
	5	10036	8466	11238	15866	11067	8797	11154	13630	0	11343
	10	9307	7429	8236	10262	8298	7461	8838	8069	0	9367
Expected Water Yield Change 1st Decade (% change)	1	+8	+9	+9	+8	+9	+8	+8	+9	-3	+8
Streams Subject to Channel Disturbance (1st decade % change)	1	<1	56	56	<1	<1	<1	<1	56	<1	<1
Average Annual Increase (M acre feet/yr)	1	80.6	73.9	97.4	69.3	68.6	68.2	67.0	69.3	0	70.9
	3	141.9	133.1	170.6	114.4	107.3	112.3	100.3	120.4	0	136.9
	5	169.4	156.2	206.7	138.5	158.7	157.2	130.0	188.4	0	189.4
Elk (Big Game) Winter Range Productivity (% of existing)	1-12	100	75	85	129	73	67	64	83	105	112
Summer Range Productivity (% of existing)	1-12	100	150	135	125	113	107	82	122	110	125
Net Habitat Productivity (% of existing)	1-12	100	80	90	125	78	72	69	88	105	119
Elk Population (M Animals)	1-12	9.3	7.4	8.3	11.6	7.2	6.7	6.4	8.2	9.7	11.1
Wildlife Habitat Improvement (Avg. Annual Acre Equivelents)	1	7500	6000	8000	8000	8000	8000	7700	0	0	8580
	3	8000	6000	0	8000	8000	8000	7700	0	0	6300
	5	8000	6000	0	8000	8000	8000	7700	0	0	6300
	10	8000	6000	0	8000	8000	8000	7700	0	0	6300

(footnotes following)

Table II-48 (continued): Average Annual Total Resource Production by Alternative

Resource Production by Alternative and Selected Benchmark 1/

Output/Activity	Decade*	Alternative							MAX PNV	MIN LEV	RPA RUN
		a	b	c	d	e	f	g			
Aquatic Habitat											
-Roaded Riparian acres (mi)	1-12	997	864	1012	839	861	781	671	---	750	---
-Change in Amount of -Riparian Area Roaded (%)	1-12	+13	-2	+15	+4	-2	-11	-24	---	-15	---
-Fish Population Potential (M no. >6") in Streams	1	905	868	823	964	966	968	970	665	856	893
	3	901	867	819	962	968	972	978	659	856	888
	5	899	866	815	962	968	975	987	652	856	883
	10	894	865	811	960	969	978	995	647	856	877
Minerals-Lands with Very High Mineral Potential in Roadless Managment (M acres)	1-12	26.2	46.0	31.9	27.9	24.0	102.1	198.4	20.0	38.0	22.8
Activity Fuel Treatment (M acres)											
- 1st decade		11.1	9.8	11.8	6.5	8.3	10.6	6.9	13.1	0	11.3
- Peak decade		19.7	20.7	22.3	20.5	24.1	20.6	10.9	27.6	0	25.9
Road Access											
Roads needed for Mgmt. 2/		13175	10569	12592	11109	11588	10863	11108	10468	0	11022
- Collector (miles)	1-12	3925	3405	3925	3852	4371	3727	2996	4567	0	4013
- Local (miles)	1-12	9250	7164	8667	7257	7217	7136	8112	5901	0	7009
Collector Roads Open for Public Use (miles)	1-12	2208	1500	1850	1883	1584	1425	1750	1440	1650	1650
Visual Quality (% of Inventored Visually Sensitive Areas Maintained)	1-12	90	89	57	71	52	73	56	28	100	60
Benefits 3/											
-Timber Benefits (MM $/Year)	1	30.7	29.8	36.4	24.6	24.7	25.0	20.8	27.9	0	27.6
	3	41.3	40.1	48.8	43.3	44.2	41.7	40.0	62.6	0	50.2
	5	50.9	49.4	60.2	51.3	54.6	49.9	49.1	92.5	0	81.5
	10	56.7	55.0	67.1	54.4	58.2	53.5	52.5	74.3	0	48.9
-Recreation Benefits (MM $/Year)	1	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	3.8	8.6
	3	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	4.8	12.1
	5	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	5.8	16.9
	10	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	5.8	16.9

(footnotes following)

Table II-44 (continued): Average Annual Total Resource Production by Alternative

Resource Production by Alternative and Selected Benchmark 1/

Output/Activity	Decade*	Alternative a	b	c	d	e	f	g	MAX PNV	MIN LEV	RPA RUN
-Range Benefits (MM $/Year)	1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0	0.2
	5	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0	0.3
	10	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0	0.3
-Total Priced Benefits (MM $/Year)	1	39.5	38.6	45.2	33.4	33.5	33.8	29.6	36.7	4.0	36.4
	3	53.6	52.4	61.1	55.6	56.5	54.0	52.3	74.9	4.8	62.5
	5	68.2	66.6	77.4	98.5	71.8	67.1	66.3	109.7	5.8	98.7
	10	73.9	72.2	84.3	71.6	75.4	70.7	69.7	91.5	5.8	66.1
-Total Priced Market Benefits (MM $/Year)	1	30.9	30.0	36.6	24.8	24.9	25.2	21.0	28.1	0	27.8
	3	41.5	40.3	19.0	43.5	44.4	41.9	40.2	62.8	0	50.4
	5	51.3	49.7	60.5	51.6	54.9	50.2	49.4	92.8	0	81.8
	10	57.0	55.3	67.4	54.7	38.5	53.8	52.8	74.6	0	49.2
-Total: Priced Nonmarket Benefits (MM $/Year)	1	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	4.0	8.6
	3	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	4.8	12.1
	5	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	5.8	16.9
	10	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9	5.8	16.9
Costs 3/											
-Trail Construction+Reconstruction (M $/Year)	1	208	241	225	208	203	217	236	163	0	210
	2	208	241	225	208	203	217	236	163	0	210
	3	208	241	225	208	203	217	236	163	0	210
	4	208	241	225	208	203	217	236	163	0	210
	5	208	241	225	208	203	217	236	163	0	210
-Road Construction+Reconstruction (M $/Year)	1	4634	4768	5197	3308	3340	3160	2162	4989	0	8124
	2	4140	4347	4289	3501	3881	3790	3289	4422	0	6263
	3	3909	3868	3892	5107	5344	4188	3476	4689	0	4759
	4	809	3637	4774	4417	5594	4181	3353	5966	0	2749
	5	1998	3069	2930	3375	2430	3607	3951	6537	0	3907
-Planting and Site Prep (M $/Year)	1	2390	2198	2731	2709	2216	1765	1314	2136	0	1875
	2	2377	2393	2998	2838	2353	1883	1625	2092	0	2545
	3	5817	2745	4051	3324	3074	2173	1825	2819	0	4155
	4	2947	2123	2563	2830	2612	1912	1690	2761	0	4577
	5	3013	2802	3384	3024	2366	1938	1585	3335	0	4030
-Precommercial Thinning (M $/Year)	1	362	287	419	68	126	131	81	178	0	227
	2	362	287	419	68	126	131	81	0	0	227
	3	362	287	419	68	126	131	81	361	0	227
	4	372	681	1046	72	99	258	344	930	0	124
	5	429	483	972	72	99	258	344	609	0	546

(footnotes following)

Table II-44 (continued): Average Annual Total Resource Production by Alternative

Resource Production by Alternative and Selected Benchmark 1/

Output/Activity	Decade*	Alternative							MAX	MIN	RPA
		a	b	c	d	e	f	g	PNV	LEV	RUN
-Total Capital (M $/Year)	1	7060	7163	7901	6305	5787	5172	3713	7465	0	10437
	2	6691	6892	7183	6547	6437	5890	5149	6677	0	8946
	3	7164	6509	6991	8826	8971	6941	5780	8031	0	7887
	4	3498	6259	7778	7599	8612	6825	5967	9819	0	6050
	5	4741	5765	6031	6606	4998	5762	5771	10644	0	7364
Social/Economic 3/											
- Area Employment Associated with Forest Service Activities (Jobs)	1	3500	3399	3765	3444	3444	3444	3204	3670	1934	3682
	3	4032	3921	4357	4005	4129	3976	3847	4877	324	3905
	5	4249	4138	4575	4221	4346	4192	4148	5670	259	4656
	10	4249	4138	4575	4221	4346	4192	4148	4925	259	4023
- Area Income Associated with Forest Service Activities (MM $/YR)	1	38.1	36.6	42.0	37.2	37.2	37.2	33.6	40.6	6.8	40.8
	3	44.4	42.7	49.2	44.0	45.8	43.5	41.6	57.0	2.6	46.7
	5	46.1	44.4	50.9	45.6	47.5	45.2	44.6	67.2	2.1	52.1
	10	46.1	44.4	50.9	45.6	47.5	45.2	44.6	56.1	2.1	42.7
- Payments to Counties (MM$/YR)	1	2.5	2.5	2.8	2.4	2.4	2.4	2.1	2.6	0.9	2.8
	3	4.3	4.4	5.1	4.5	4.8	4.4	4.1	6.5	0	5.4
	5	5.5	5.6	6.5	5.8	6.1	5.7	5.4	9.9	0	8.5
	10	5.5	5.6	6.5	5.8	6.1	5.7	5.4	7.8	0	5.1
- Returns to Treasury (MM$/YR)	1	9.5	9.7	11.2	9.0	9.0	9.0	7.4	11.3	3.6	11.0
	3	17.2	17.5	20.3	17.9	19.1	17.7	16.2	25.9	0	21.5
	5	22.1	22.4	26.0	23.0	24.4	22.7	21.7	39.7	0	33.8
	10	22.1	22.4	26.0	23.0	24.4	22.7	21.7	31.3	0	20.5
- Discounted Benefits (MM$)											
Timber 5/	1-12	1007	980	1087	969	1034	1044	942	1264	0	1053
Range	1-12	5	5	5	5	5	5	5	5	0	5
Recreation	1-12	295	295	295	295	295	295	295	295	187	295
Total Benefits	1-12	1307	1280	1387	1269	1334	1334	1242	1564	187	1353
- Discounted Costs (MM$)											
Timber 5/	1-12	648	620	676	609	642	698	671	864	0	692
Range	1-12	2	2	2	2	2	2	2	2	0	2
Recreation	1-12	21	22	21	22	20	21	22	20	4	22
Roads	1-12	129	126	140	128	140	136	133	161	0	132
Other	1-12	331	336	342	334	309	352	211	138	97	353
Total Costs	1-12	1131	1006	1181	1095	1113	1209	1039	1185	101	1201
Present Net Value (MM$)	1-12	176	174	206	174	221	135	203	379	86	152
Total Budget Required to Implement (MM$)	1	18.7	19.4	21.6	19.7	16.2	18.1	14.0	19.3	2.6	22.8
Opportunity Cost (MM$)	1-12	203	205	173	205	158	244	176	0	293	227

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* Decade 1 is the Plan Period; decades 2-12 are projections.

1/ The constraints applied to Alternatives a through g and benchmark runs are described in appendix B of this document. The Maximum PNV benchmark level is unconstrained by sustained yield and varied significantly by decade. This benchmark should not be used comparatively with other alternatives to establish potential.

2/ Total system required over 12 decades. The mileage shown excludes 423 miles of arterials needed in all alternatives except Minimum Management.

3/ All dollar values based on 1978 dollars.

4/ Monetary values based on expected use rather than resource potential.

5/ Timber benefits and costs are based on delivered log values.

CHAPTER III - AFFECTED ENVIRONMENT

This chapter describes the environment that may be changed by the implementation of the proposed action (Alternative d) or other alternative plans considered. Section A describes the physical, biological, social, and economic settings, and Section B describes the Forest's current resource situation. There have been no significant changes in the affected environment between the draft and final EIS.

The following additions were made to this chapter between the Revised Draft EIS and the Final EIS.

The discussion on timber management was expanded to include a discussion of "below-cost sales." The discussion of the Continental Divide National Scenic Trail (CDSNT) has been included in the section on the National Trail System.

A. Physical, Biological, Social, and Economic Settings

1. General Setting

The Rocky Mountain Region, of which the Forest is a part, is characterized by generally north to south-oriented mountain ranges separated by flat valley floors and foothills. Atmospheric conditions, as modified by aspect and slope, become progressively cooler and more humid in the transition from lower to higher elevation. Climatic zones range from the semiarid and relatively warm valley bottoms through a broad range of cool, moist coniferous forests to the cold, moist subalpine and alpine region characterized by bedrock escarpments, coarse rock debris, cirque lakes and headwalls carved by alpine glaciation in the recent geologic past. This topographic variety provides a diverse mosaic of plant and animal communities and distinctive panoramas of high mountains and broad valleys.

Although its 2.1 million acres of diverse and scenic mountainous country extend into seven counties, the Lolo National Forest is primarily located in Missoula, Mineral, and Sanders Counties, providing an important stimulus to the area's economy, recreation, and esthetics. Lands administered by the Lolo Forest surround the city of Missoula, which serves as the principal economic and cultural center in the area. Of the population within the Forest boundary, over 60 percent live in Missoula County.

2. Physical Setting

a. Topography

The Lolo National Forest consists of an area 120 miles long and 40 to 80 miles wide, spread out in discrete segments across west- central Montana from the Continental Divide to the Idaho border. The Missoula Valley acts as the hub with bottom lands radiating out from the center into and along the valleys of the Bitterroot (to the south), Clark Fork (southeast), Blackfoot (northeast), and Frenchtown-Ninemile (northwest). The Clark Fork of the Columbia River, the major drainage in the region, flows from the southeast to northwest across the area and generally bisects the Forest. The Bitterroot, Blackfoot, St. Regis, and Thompson Rivers constitute the primary tributaries to the Clark Fork. Other significant streams flowing into it include Rock, Fish, Rattlesnake, and Ninemile Creeks.

These streams drain a highly dissected steep and rugged terrain. Although most of the land is heavily timbered, many south-facing slopes have a grassy, open, park-like appearance, especially on the lower faces. Mountains rising in excess of 7,000 feet in elevation usually exhibit the effects of alpine glaciation with bowl-like cirque basins and U-shaped valleys separated by narrow, serrated ridgelines or aretes. Examples of glacial features such as these are common to the Rattlesnake Creek drainage and along the State Line Divide.

Slopes on the Forest are generally steep. Gentle slopes lie adjacent to the larger streams and along ridges. Midslopes between streams and ridges are steep. Those rising above major streams are usually very steep.

Table III-1: Slope Classes on the Nonwilderness Portion of the Forest:

Class	Percent Slope	Percent of the Area
Gentle	Under 40	36
Moderate/Steep	40 - 60	50
Very Steep	Over 60	14

The opportunities for and consequences of Forest management are greatly influenced by slope. Generally, lands with gentle slopes are also the most productive for many resources including recreation, wildlife, and timber. They are the least costly to manage, allow the greatest range of management practices, and offer the widest range of management opportunities with the lowest potential to adversely affect other values. As slopes increase, management costs escalate, the potential for adverse impacts increases, and the range of management practices becomes restricted.

b. Precipitation

The Missoula Valley itself is semiarid with annual precipitation of about 14 inches. Precipitation increases with elevation. Nearly one-half of the 42 inches of average annual precipitation that falls as rain and snow on the Lolo National Forest runs off as high quality streamflow. Over two-thirds of the precipitation falls as snow which is the primary source for ground water recharge and streamflow.

c. Visual

About 30 percent of the Forest outside of wilderness is considered to have distinctive scenic quality. Portions of the Forest are seen by about 100,000 residents -- about half the population of western Montana. In addition, parts of the Forest can be viewed from about 280 miles of Federal or State highway corridor, with a daily average use of around 20,000 vehicles. At the present time, about 80 percent of the Forest has a relatively natural appearance.

3. Biological Setting

This section describes general vegetative categories on the Forest and threatened and endangered plants. Wildlife species are discussed later in this chapter.

At this time, there are no known plants which have been classified as threatened or endangered within the boundaries of the Forest.

There are seven vegetative groups on the Forest (On and Losensky, 1976):

Habitat Group 0 - Habitat Group 0 represents a mix of various vegetative conditions, all of which are classed as nonforest or noncommercial forest land. Management activities have only a minimal chance of affecting species diversity.

Scree and Forested Rock: Because of the lack of fuels and the discontinuous vegetatal development, only minor changes have occurred since presettlement times. Road development and the subsequent effect on roadside vegetation will be the only area of impact during the life of the plan. The expected impacted acreage will be less than 5 percent of the habitat type.

Portions (2 percent) of the noncommercial land have had some timber harvest. Generally, this cutting was done in the early 1900's and overstory recovery is still occurring. None of this group has been assigned to timber management activities.

Meadow: Changes in meadow vegetation, in some cases, has revolved around two impacts, beaver trapping and heavy grazing.

On a few areas beaver were eliminated through trapping which caused their dams to deteriorate, and in time resulted in a drop in the water table. Heavy grazing eliminated willow and other food sources for beaver, preventing the dam builder's recovery. These events led to a change in the total vegetative structure of the meadow with bunchgrasses increasing over sedges and more moisture-loving forbs, and with trees invading the grass community.

Grazing alone can affect the plant structure of a meadow by reducing the more palatable species and providing a conveyance to introduce weedy or naturalized species.

With proper management, these trends can be reversed. Fire can retard the tree invasion, and the reintroduction of beaver, where possible, can restore the moisture levels. Control of grazing levels provides for a more diverse grass community which are more resistant to invasion of introduced species.

Mountain Grassland: Fire protection has resulted in some tree invasion of these sites on the ecotone between true grass climax and forest. Reintroduction of fire will maintain the presettlement size of these sites. Past grazing has had some impact, particularly the sheep grazing between 1900 and 1950. Proper range management of these sites along with fire will maintain the presettlement species mix.

Other Sites: Other sites, such as alder glades, snowslides, etc., have been little affected since presettlement periods. Proposed management should not affect diversity within these communities.

Habitat Group 1 - On the Lolo Forest, Habitat Group 1 is composed principally of the dry-warm Douglas-fir types. Climatic conditions limit tree species to ponderosa pine and Douglas-fir. They are dominated under natural conditions by fire-maintained ponderosa pine stands. The major habitat type is Douglas-fir/rough fescue (Psme/Fesc) with a minor amount of Douglas-fir/pinegrass, wheatgrass phase (Psme/Caru-Agsp). Because of fire control activities, many of these stands, which were generally quite open under natural conditions, have developed dense stands of Douglas-fir regeneration. As a result, mixed stands of Douglas-fir and ponderosa pine are more common and the diversity of the understory community has been reduced.

In stands not managed for timber activities, fire at 10-year intervals will maintain near-natural conditions dominated by grasses and occasional patches of ninebark, serviceberry, and chokecherry.

In stands managed for timber activities, selection harvest with fire will maintain similar conditions to natural conditions with a younger-aged tree component.

Habitat Groups 2 and 3 - The major component of Habitat Group 2 is Douglas-fir/ninebark (Psme/Phma) with minor amounts of Douglas-fir/snowberry (Psme/Syal), Douglas-fir/dwarf huckleberry (Psme/Vaca), and the warmer phases of Douglas-fir/pinegrass (Psme/Caru). Group 2 can best be portrayed by describing expected changes within two moisture phases (Arno, 1985).

Dry Phase: This phase represents a major portion of the Lolo's winter range, and is found on the lower, warmer slopes of the Forest. During presettlement periods, natural fire occurred at 10- to 30-year intervals, which favored ponderosa pine. Stands were characteristically parklike, with large ponderosa pines and a relatively open understory. Since the introduction of fire control, Douglas-fir reproduction has dominated the understories of these stands. Continued protection without harvest will lead to pure Douglas-fir stands in about 250 years.

With partial timber cutting and prescribed burns, however, ponderosa pine can be favored and maintained in stands that closely resemble natural conditions. After treatment, intolerant shrubs such as serviceberry, ceanothus, willow, and chokecherry will generally increase, peaking 20 to 50 years after the disturbance. As the intolerant shrubs then decrease, the more tolerant shrubs such as ninebark will regain their former coverage. The amount of pinegrass and sedges generally decreases after regeneration cutting. As the stand develops and again influences the microsites, these species will return to pretreatment levels.

Moist Phase: Fires on these sites occur less frequently (every 20 to 60 years) than on dry phase sites. This fire regime maintained mixed open stands of larch, Douglas-fir, and ponderosa pine. Regeneration is generally patchy. As a result of fire protection, Douglas-fir has again gained dominance in the understory. In many stands, this layer has increased significantly. Conversion to pure Douglas-fir stands will occur in about 150 years with continued fire protection.

Again, partial cutting and underburning will help maintain near-natural timber conditions. Generally, the shrub layer will respond as the dry phase did but with significantly less development in the intolerant shrubs. In disturbed stands, pinegrass will usually maintain or increase its position in the forb layer. Understory vegetation will return to predisturbance conditions more quickly than in the dry phase.

The major component of Habitat Group 3 is Douglas-fir/huckleberry (Psme/Vagl). Minor components are the cool phases of the Douglas-fir/pinegrass type (Psme/Caru) and lesser amounts of Douglas-fir/twinflower (Psme/Libo). Presettlement stands were dominated by Douglas-fir, with recently disturbed stands containing large amounts of lodgepole pine and western larch. Natural fire occurred about every 28 years. On the moister sites, western larch was favored by natural fire. Mixtures of Douglas-fir, lodgepole pine, and western larch were common on the remaining areas. Understories were generally open, with huckleberry and pinegrass dominating the stands. Since fire protection was introduced, dense stands of Douglas-fir reproduction have developed, and the stands will convert to pure Douglas-fir in about 200 years with continued protection.

Varied stand composition can be achieved by using appropriate regeneration harvest techniques and fire. Except for western larch, near-natural tree diversity should not be difficult to match. Generally the shrub layer decreases following regeneration harvest, particularly huckleberry and (to some degree) beargrass. Pinegrass and sedges increase significantly. As the new stand becomes established, huckleberry and beargrass revert to their former position with a corresponding drop in the graminoids. This cycle normally occurs in 20 to 50 years.

Habitat Group 4 - This habitat group is composed of a number of habitat types all characterized by above-average moisture conditions in a favorable climate for tree growth. The climax tree species will vary over the Forest according to temperature and available moisture. Subalpine fir/menzesia (Abla/Mefe) and grand fir/beargrass (Abgr/Xete) are the major components, with lesser amounts of western red cedar/beadlily (Thpl/Clun) and subalpine fir/beadlily (Abla/Clun). In addition, a large number of habitat types representing various soil and moisture regimes are scattered in small units throughout the Forest. Natural fire is less frequent in this group than in those previously discussed because of the moist environment. As a result, stand structures have not been greatly affected by fire protection, and remain similar to natural conditions.

Since the major components of this type are somewhat shade tolerant, regeneration methods such as shelterwood cutting will produce the same stand components found under natural conditions. The more intolerant species can be maintained by using prescribed fire in conjunction with these activities. A great deal of leeway exists to manage these stands for a variety of tree species. A potential long-term impact of management might be a reduction of subalpine fir and grand fir because of their lower commercial value. Two habitat types characterize understory conditions in this group: shrub and shrub-forbs.

Shrub Understory: The subalpine fir/menzesia portion of the group has significant amounts of shrubs present in all stages of stand development. Only under the most dense crown closures does the shrub layer decrease significantly. After timber harvest and/or burning, intolerant shrubs may increase and tolerant shrubs will increase significantly. Regeneration may be delayed by the shrub layer. As the stand develops, the amount of shrubs decreases in relation to the crown closure of the new stand.

Shrub-Forb Understory: Under mature stands, a few scattered shrubs and an occasional forb may comprise the understory component. After timber harvest and burning, forbs and shrubs will increase significantly, causing a dramatic change in species mix and numbers. As the new stand develops and provides shading, the understory vegetation will decrease in numbers and vigor, reverting to predisturbance conditions in about 10 to 50 years.

Because the normal fire-free period for this group is similar to the proposed rotation period, near-natural conditions will not be difficult to maintain.

Habitat Group 5 - The major habitat type is subalpine fir/beargrass (Abla/Xete) with only minor amounts of other types. Arno (1977), in his studies, divides the Abla/Xete type into warm and cold phases that are described below.

Warm Phase: Most natural stands were dominated by Douglas/fir and lodgepole pine with some western larch. Understories varied according to the frequency and intensity of natural fire. Generally, stands were open with scattered patches of subalpine fir reproduction. Huckleberry and beargrass dominated the shrub layer. With fire protection, the amount of subalpine fir has increased substantially in the understory. The shrub layer has remained constant.

A number of cutting methods are available to perpetuate the natural mix of tree species. Clearcutting and broadcast burning favor lodgepole pine and larch where present, while partial cutting with burning favors Douglas-fir. Partial cutting without fire tends to favor subalpine fir. Without mechanical disturbances, only minor changes generally occur in the understory. Beargrass and huckleberry will decrease, depending on the severity of the site, and pinegrass and sedge will increase. On the warmest sites, some tall shrubs such as willow may increase, but will not dominate the stand as they do in Habitat Groups 2 and 3.

Cold Phase: Natural stands in this phase were dominated by fire-maintained lodgepole pine. Subalpine fir was a major component of the understory, but generally did not achieve dominance because of stand-replacing fires or ground fires. With fire protection, these stands will be dominated by subalpine fir in about 200 years.

Understory vegetation is similar to that in the warm phase except for increased amounts of grouse whortleberry. After treatment, changes similar to those in the warm phase can be expected; however, tall shrubs will not respond. Recovery and tree growth is slower than in the warm phase.

Clearcutting with burning will maintain natural diversity. Partial cutting with light underburning will also maintain the dominance of lodgepole pine. Partial cutting without fire will favor subalpine fir, which can form a dense stand in the understory and overstory. Clearcutting without fire will tend to favor a mixed stand of lodgepole pine and subalpine fir.

Habitat Group 6 - Under natural conditions, fires occurred infrequently and with low intensity. When stand-destroying fires did occur, they generally burned into the group from lower elevations. Once this group has been burned, recovery is slow, with regeneration taking up to several decades.

Only minor changes have occurred in the stand composition since presettlement time. Subtle changes in tree species mix will occur without periodic burning, and future management of these areas would allow some natural fire where possible to maintain present conditions.

4. Social and Economic Setting

The Lolo National Forest lies primarily within Mineral, Missoula, and Sanders Counties. The city of Missoula serves as a trade center for these and other western Montana cities. Employment in Missoula County accounts for 85 percent of the total employment in the three-county area.

a. Population

Missoula County is the most densely populated of the counties. Other population centers in the three counties are much smaller than the city of Missoula. Population growth, and a positive net migration rate significantly higher than the State rate of growth, resulted from relatively high employment growth in the 1970's in Mineral, Missoula, and Sanders Counties. Amenity values contribute to the area's growth and attract people to the area regardless of employment opportunities.

Sanders County, population 8,675, has the highest proportion (13.4 percent) of persons aged 65 and over; Mineral County, population 3,675, and Missoula County, population 76,016, have approximately 8 percent. The proportion of persons age 21 and under in Sanders County is 39 percent, 43.3 percent in Mineral County, and 42.2 percent in Missoula County. The population of these counties is predominately white.

Table III-2a: Number of Minority Persons per County, 1980 Census

	Sanders	Mineral	Missoula
American Indian	392 (4.5%)	44 (1.2%)	1349 (1.8%)
Other	42 (0.5%)	32 (0.9%)	1135 (1.5%)

b. Economy

Forest products are the economic backbone of western Montana. The industry is the largest component of the economic base in these counties. Sanders and Mineral Counties are dependent upon wood products for over half their economic base. Employment and earnings figures in basic industries for Missoula County show that the local economy is heavily dependent on the following industries: wood product manufacturing, University of Montana, the Federal Government, wholesale and retail trade, and transportation. Table III-2b shows employment by sector for the three counties in 1983.

Table III-2b: Total Wage and Salary Employment by Major Industry (1983)

	Missoula	Mineral	Sanders	3-County Total
Farm	95	5	132	232
Ag. Services, Forestry, Fisheries, Mining & Other	205	11	41	257
Construction	1,342	72	31	1,445
Manufacturing	4,091	291	420	4,802
Transportation & Public Utilities	2,172	60	143	2,375
Wholesale & Retail Trade	7,823	263	334	8,420
Services	6,606	98	985	7,689
Finance, Insurance, Real Estate	1,282	23	65	1,370
Government & Government Enterprises	7,441	386	699	8,526
TOTAL	31,057	1,209	2,850	35,116

The future outlook for employment and earnings in the economies of Mineral, Missoula, and Sanders Counties is uncertain largely because of the dependence on few basic industries. Government, industry, and academic specialists agree that some mills in western Montana are likely to close by the end of the 1980's, in addition to those that closed in 1979. These projections are based, in part, on the fact that private industry, for the past 10 years, has been harvesting its lands at an accelerated rate to make up for the decline in timber offered from the National Forests. In 1969, National Forest System land in Montana provided 61.4 percent of all timber harvested, while private lands provided 25.8 percent (the remaining 12.8 percent includes State, county and small private ownership). By 1978, the National Forest's share had decreased to 39.1 percent of the total harvest, while timber harvest from private lands had more than doubled to 53.5 percent (the remaining 7.4 percent includes State, county, and small private ownership, as well).

In addition to increased harvest on private lands, the classification of some commercial forest lands as wilderness, market pressures, and unpredictable management by owners of small private timber lands are frequently cited by those who feel the area's timber industry will decline.

A 15 percent reduction in earnings can be expected for those who choose to live in Montana for "quality of life", based on national average per capita income. While Missoulians in particular are not so directly dependent upon the Forest for employment and have a conservative philosophy toward resource use, individuals in Sanders and Mineral Counties more directly depend upon the Forest for their livelihood. Resource decisions concerning timber and access will impact jobs, hunting, and firewood gathering activities, as well as recreation, all of which are important aspects of many people's welfare in these counties.

While the Lolo National Forest is of varying importance to different groups of people for different resource uses, at all levels of interest, the production of timber is probably the most significant. This resource use certainly is of the greatest economic importance followed closely by water production. Livestock forage production and recreation use, including that associated with the fish and wildlife on the Forest, are of lesser economic importance. However, the livestock forage is highly important to the local users, and recreation serves mainly the local and State populations.

c. Lifestyles

There are several social values which are important to people affected by the Forest. Certain emotional and/or spiritual levels are related to the wildland. The "natural experience" provides an escape from normal daily routines and contributes to a relative state of inner peace.

Missoula and outlying areas appear to have a more diverse lifestyle, due to their urban, cultural, and academic atmosphere, than other western Montana areas. Recreational pursuits are looked upon as an important aspect of lifestyle. Also important is the sense of freedom in one's life, without being subjected to controls by others. Government regulation, dependent economies, and increasing population are felt by some people as diminishing the ability to effectively become part of the decisionmaking process. As a result, these people may resist changes in order to have some control over decisions which affect their lives. To many users, access to the Forest and the use of its resources are an important aspect of self-sufficiency.

An influx of people with varying backgrounds and philosophies tends to decrease the cohesiveness of some communities. The Forest faces the dilemma of mitigating the consumption-versus-preservation conflict during a time of changing values among diversified constituents. Traditional use and ownership of the land for ranching, logging, or other forms of use versus development are also addressed as concerns by individuals. Subdivisions and increasing population are affecting all areas near the Forest. Conflicts will continue to increase as land, values, and people come into opposition.

d. Forest Receipts

The Lolo Forest's three primary counties received the following payments (in thousands of dollars) from the Lolo National Forest receipts for fiscal years 1981, 1982, and 1983:

Table III-3: County Payments (M$) - 1981 through 1983

Fiscal Year	Mineral	Missoula	Sanders
1981	330.5	254.8	247.6
1982	169.7	130.8	127.1
1983	213.8	164.9	160.2

These amounts were determined from total Forest receipts that include timber, range, minerals, recreation, and land uses.

e. Forest Employment and Budget

Employment in work-years was 461 in 1981, 436 in 1982, 426 in 1983 and is currently approximately 420. The average annual budget for the past 5 years was $16.1 million. Excluding inflationary effects, the annual budget increased until about 1981 and has been decreasing since that year.

B. Current Resource Situation

1. Recreation

Recreation use is measured by recreation visitor days (RVD's)--where 1 day equals 12 hours of use. Total recreation use on the Forest has been increasing steadily, with the majority of use associated with dispersed recreation activities.

A variety of conflicts arise from time to time between groups using the Forest for recreational activities. Examples include conflicts between motorized visitors and nonmotorized visitors, hikers and horsemen, snowmobilers and cross-country skiers, or powerboats and paddle craft.

Private concessionaires provide both facilities and services to accommodate a wide variety of recreation activities on the Forest. Examples include downhill skiing, boating, swimming, trail riding, hunting, and fishing. Use of these areas amounted to 70,900 visitor days, or 5 percent of the total recreational use on the Forest during FY 1980.

Existing concessionaires, in some cases, expand their areas of operation and occasionally, additional applications are received from persons wanting to construct new facilities or provide services for different activities on Forest lands. The Forest has suitable areas potentially available for expansion of downhill skiing, outfitting and guiding, and other public services.

The City of Missoula is somewhat unique from the standpoint of having high quality recreation land at its doorstep. Areas such as Pattee Canyon, Blue Mountain, Fort Fizzle, and the lower Rattlesnake fill a variety of recreation needs for a wide range of activity. While these areas fill an important role for many people, they also are the site of a variety of nonconforming uses such as destructive keggers, vandalism, dumping, littering, off-road vehicle trespass, and careless shooting. These areas are expensive to manage because of the need for law enforcement, visitor contact, cleanup, and repair or replacement of damaged facilites.

a. Dispersed Recreation

In FY 1983, use of dispersed areas totaled approximately 960,000 RVD's or 80 percent of the total Forest use. Much of this use takes place near population centers or in the vicinity of developed sites and resorts. The more popular dispersed recreation activities on the Forest include hunting, fishing, hiking, horseback riding, motor touring, berry picking, firewood gathering, and cross-country skiing. National Forest System lands fronting the Clark Fork are limited, often without access, and in many instances are too steep for recreation use.

Because of the extensive dispersed recreation opportunities on the Lolo Forest and the relatively low resident population, the supply potential for dispersed recreation far exceeds expected demand throughout the 12 decades projected in this EIS.

b. Developed Recreation

There are 62 developed recreation sites on the Forest, including campgrounds, boating sites, end-of-road trailheads, and concessionaires' sites such as skiing areas. Developed National Forest sites received approximately 237,000 RVD's in FY 1983. This is about 20 percent of the Forest's total recreation use. These sites have a capacity to accommodate about 6,541 people at one time. Nearly half receive more than 40 percent of their theoretical potential use each year. Popular sites, such as destination campgrounds near lakes or other attractions, are full on holidays and popular weekends. Vegetation and soils at some of these sites reflect use levels which cannot be sustained over many years without deterioration. Other developed sites, located in more remote locations, receive much lighter use and costs of operation are high when assessed against actual use. Higher energy costs are affecting use patterns. Lengths of stay are increasing at destination sites, but more remote sites and bedroom-type campground use levels have dropped slightly in recent years.

The cost of administration, operation, and cleanup of developed sites has increased dramatically. The recent loss of manpower programs such as YACC, YCC, and CETA has reduced the Forest's ability to adequately care for developed sites. Few developed sites have adequate facilities to accommodate the handicapped, elderly, and persons with special needs. According to the most recent analysis, developed sites on the Forest need more than $1,000,000 worth of facility maintenance or replacement. Developed site management requires a disproportionate share of the Forest's budget. For example, in FY 1980, developed sites, including those operated by concessionaires, received about 25 percent of the visitor use, but required 67 percent of the recreation budget.

c. Recreation Trails

The Forest's trail system is the most important dispersed recreation facility. In the 1950's, the trail system totaled more than 3,500 miles; today there are less than 1,900 miles. Many trails have been abandoned because of road construction in close proximity to the trails or inadequate funds for trail maintenance. Several trail access points are now blocked because of posted private land. A Recreation Opportunity Guide is available for most trails and recreation sites; it provides specific information about sites, trails, and trail systems, conditions and seasons of use, terrain, expected recreational experience, hazards, and maps. Approximately 117 miles of trail are identified as in need of repair or relocation.

2. Cultural Resources

The Lolo National Forest contains a rich and diversified number of cultural heritage sites within its boundaries. The historic and prehistoric sites that exist on the Forest are protected by the National Historic Preservation Act of 1966 and other mandates. Cultural resource inventories have located over 300 sites, many of which are eligible for listing on the National Register of Historic Places. To date, the Lolo National Forest has one National Historic Landmark (The Lolo Trail) and three sites listed on the National Register of Historic Places.

The prehistoric resources within the Forest appear to date from the Early Plains Archaic Period (5,000 years Before Present) and perhaps earlier. These Native American sites range in time up to the Historic Period (approximately 1800 A.D.) and are represented in a variety of different site types. Long-term occupation sites are located along the major rivers in the Forest while seasonal, resource specific sites have been recorded at the higher elevations. Prehistoric art in the forms of pictographs and religious sites such as vision quests have also been found on the Forest.

Historic sites on the Forest date from the earliest documented use of the area by the Lewis and Clark expedition in 1805 up to and including sites built or used by, the Civilian Conservation Corps during the depression of the 1930's. Several site types representative of the major themes of western historical development occur on the Forest and include homesteads, early mining and logging operations, as well as early Forest Service facilities.

The Lolo National Forest has supported a Cultural Resource Management Program since 1975. The program's responsibilities are to inventory, evaluate, and manage cultural resources located on National Forest System lands. This is done in compliance with various Federal and state laws applicable to cultural resource management. Forest personnel routinely consult with the Montana State Historic Preservation Office, the Advisory Council on Historic Preservation, as well as resident Native American groups on all projects that may affect cultural resources or places important in traditional Native American religion.

Since 1975 the Forest has systematically inventoried its lands for cultural resources in advance of ground disturbing activities. To date, well over 400 prehistoric and historic sites have been inventoried and many of these are eligible for inclusion on the National Register of Historic Places. The Lolo Trail, a prehistoric (known as Nee Mee Poo Trail) and historic travel route that crosses the Bitterroot Mountains was made famous by the Lewis and Clark expedition, and the Nez Perce Indians during the War of 1877 is a National Historic Landmark. Sites such as Rock Creek Cabin, the Ninemile Remount Depot, and Fort Fizzle are other sites listed on the National Register of Historic Places. Savenac Nursery, Camp Paxson, and several historic lookouts have been determined eligible for listing on the National Register.

If a significant site may be affected by proposed activities, alternatives to mitigate or minimize the effect are developed in consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation. Mitigation measures employed Forest in recent years include: formal excavation of the two prehistoric sites that would have been damaged by road construction and removal of two badly deteriorating historic structures from their original location to sites where they serve as interpretive areas for the public.

The goals of the Forest's Cultural Resource Management Program are to comply with the various Federal and state cultural resource laws and regulations and to integrate these resources on equal footing into the Forest management program. To date, Draft Management Guidelines for compatible management of the Lolo Trail with other resource objectives have been written. Also, a prehistoric overview has been written for the Lolo and Bitterroot National Forests that describes in detail previous archeological work and the current knowledge about the prehistory of the area.

3. Wilderness, Roadless, and Special Areas

The Forest contains units of nationally recognized wilderness, a national recreation area, and portions of National Historic/Scenic/Recreation Trails.

a. Portions of the Scapegoat Wilderness

The Scapegoat Wilderness area (74,832 acres on Lolo National Forest) has outstanding wilderness values and is readily accessible from the population centers of western Montana. The existing network of trails through the area vary from low standard primitive routes to higher standard mainline trails. The wilderness provides habitat for a wide variety of wildlife and fish species native to the Rocky Mountains. Fishing and hunting is popular. The grizzly bear inhabits the wilderness and numerous sightings have been reported by recreationists in the alpine areas during the summer.

Several administrative cabins, lookouts, and other structures and facilities exist in the Wilderness. Big Prairie, Gate Park, and Schaffer Meadows serve as work centers. All structures were established prior to the designation of the area as wilderness. The cultural resources within the Scapegoat Wilderness, especially the high altitude prehistoric sites, may be one of the more significant cultural resources on the Forest.

b. Welcome Creek Wilderness

Welcome Creek Wilderness (28,184 acres) has a fairly continuous tree cover. About 25 miles of trails lying mostly on steep ridges and in narrow valley bottoms provide access to the area. Historically, most use has been confined to the lower several miles of the bottom trails. The area receives the majority of its use during hunting season. Other use is primarily summer day hiking. The terrain limits the number of suitable camp locations within reasonable distance of a trail. There are a few flat areas large enough to accommodate many people, with or without animals, and provide a feeling of solitude or other attributes of a wilderness experience. Forage for packstock is scarce, generally limited to small benches along the streams.

Several cabins and their associated debris dumps remain in the area from mining activity in the later 1800's and early 1900's. Some of the cabins are liveable and show an evolution of various types of materials and tools used on them to keep them livable. Very few, if any, historic values remain on these sites. Other cabins do not appear to have been modified or "improved" and have significance as a record of this period of western Montana history.

At the present time, conditions in the area provide excellent habitat for marten, mink, and bobcat. Welcome Creek also provides summer range for herbivores that winter in the Sapphire Mountains.

c. Rattlesnake National Recreation Area and Wilderness

The Rattlesnake National Recreation Area and Wilderness Act of 1980 was signed into law on October 19, 1980. The Wilderness portion of the Rattlesnake National Recreation Area contains approximately 31,479 acres of the 61,000 acre area. About 20,000 acres of the Wilderness are currently National Forest System lands and the remaining 13,000 acres belong to a variety of owners, including Montana Power Company, Plum Creek Timber Company, and private parties. (Since the time of the analysis and writing of this document, the Montana Power Company and Plum Creek exchanges have been completed.) The upper Rattlesnake is characterized by a typical mountain glaciated landform. The valleys are narrow and steep-sided with shallow soils and hanging valleys with numerous lakes and potholes. The area contains outstanding scenery and provides opportunities for primitive types of recreation, including hiking, backpacking, horseback riding, cross-country skiing, snowshoeing, hunting, and fishing. The area also provides unique education opportunities because of its proximity to the University of Montana and the Missoula County School System.

The Wilderness portion is located within 7 miles of the city limits of Missoula, Montana. Several roads and trails provide relatively easy access to residents of the Missoula area and other publics which can reach the trailhead by walking, bicycling, or by public transport.

Rattlesnake Creek serves as a municipal watershed for the City of Missoula. The major travel routes parallel the creek, both inside and outside of the Wilderness.

The Wilderness ecosystems provide habitat for a variety of wildlife and fish species indigenous to the northern Rocky Mountains, as well as several introduced species. Fourteen wildlife species have been associated with the Wilderness. They include: fisher, lynx, elk, cougar, wolverine, pine marten, eagle, cutthroat trout, mountain goat, grizzly, golden eagles, goshawk, and ptarmigan. Hunting and fishing have been traditional uses of the Wilderness. The lakes and streams possess native and introduced species of fish. Infrequent grizzly bear sightings have been reported in the Wilderness. It is believed that the bears utilize the area as a part of their migratory habits in conjunction with their use of the Upper Jocko area and the Mission Mountain Wilderness.

There are no administrative facilities such as cabins, lookouts, or fences within the Rattlesnake Wilderness. There are remains of historic cabins in the area which were used by trappers or early-day prospectors. An old cabin, named Snowshoe Inn, is located northwest of Carter Lake. A lookout located on Mineral Peak and a radio/television transmission site located on Point Six are adjacent to the Wilderness boundary, and visible from portions of the Wilderness.

d. Portions of the Selway-Bitterroot Wilderness

The Selway-Bitterroot Wilderness, 1,340,681 acres in size, is located on portions of four National Forests, with 9,767 acres located on the Lolo National Forest. This wilderness was one of the original units included in the National Wilderness System with the passage of the Wilderness Act of 1964. Prior to this designation the area had been managed as a Primitive Area since 1936. Management direction for this Wilderness is contained in a formal document, "Selway-Bitterroot Wilderness General Management Direction," developed in response to NFMA Regulations 36 CFR 219.12(f).

e. National Trail System

The Lolo is served by 1,823 miles of inventoried trails. Of this total, 182 miles serve wilderness areas and 1,641 serve nonwilderness lands. Approximately 89 miles are included in the National Trail System as scenic, historic, or recreation trails, for the purpose of promoting enjoyment and appreciation of the outdoors.

Table III-4: National Trail System Registry, Lolo National Forest Segments

National Scenic Trails	Miles
Continental Divide 1/	22.0
National Historic Trails	
Lewis and Clark	28.0
National Recreation Trails	
Skookum Butte, #304	1.7
Pattee Canyon Ski Tour	4.2
Stateline, #738	18.3
Morrell Falls, #30	2.5
Blue Mountain Equestrian and Hiking, #3	6.0
Blue Mountain Nature, #4	.25
Baldy Lookout-Lake Trail, #340	3.0
Cascade Falls, #242	3.0

1/ The Forest identified Trail Nos. 31, 32, and 406 as the possible location of the Continental Divide National Scenic Trail (CDNST) because: 1) there is a serious potential for grizzly bear conflicts if a new trail is constructed along the Divide itself; and 2) the public has requested information as to where the trail will most likely occur in order to hike it. Actual trail locations will be determined via the Final Comprehensive Plan for the CDNST.

f. Roadless Areas

While 7 percent of the Forest is wilderness, another 37 percent is roadless and undeveloped. The remaining 56 percent has been or is subject to being developed, or to remain as roadless parcels; but of too small an acreage to be included in the Roadless Area Inventory.

In the 1979 Roadless Area Review and Evaluation (RARE II), approximately 654,000 acres of roadless land outside of existing wilderness were inventoried on the Forest. In that process, about 212,000 acres were recommended for wilderness. No action has been taken on the acres recommended for wilderness in RARE II.

Of the remaining acres inventoried in RARE II, about 53,000 acres have been removed from the inventory because they no longer meet the criteria for roadless due to more recent management activities.

As a result of the revision of the NFMA Regulations in September, 1983, the Forest is again evaluating roadless areas. The new inventory includes those acres of land recommended for wilderness in RARE II, those acres released for nonwilderness uses in RARE II which have not been developed, and those acres from past unit plans (land management plan preceeding NFMA) that were not included in the 1979 RARE II inventory. A more precise definition of the roadless area boundaries and recalculation of acres has been made and entered in the Forest Plan data base.

Today, the roadless resource on the Forest includes all or portions of 36 areas covering 776,190 acres. A brief description of the wilderness characteristics of these 36 acres follows. Appendix C of this document contains specific detailed descriptions and analysis of the characteristics and values of each roadless area.

READEX FICHE

A Listing of Wilderness Characteristics of Roadless Areas:

Roadless Area	Wilderness Attributes
L1LAQ McGregor Thompson	Generally, the area is undisturbed within the boundaries; however, the natural appearance is deemed moderate due to ongoing road construction for timber harvest. The area is in checkerboard ownership with private owners salvaging mountain pine beetle infested lodgepole. The deep-cut valleys in the topography offer the visitor interesting views of rock formations, but solitude is limited.
01141 Maple Peak	Old roads and prospecting evidence exists in the area, along with an old lookout cabin located on a hikers scenic point. Total acreage provides solitude and primitive recreation opportunities are moderate.
01142 Stevens Peak	The area contains old mining cabins, lookout sites, mineral development areas, and associated access. Solitude opportunity is low due to the small size and permanent off-site intrusions. Topographic screening is moderate. Although the upper end of the drainage is fairly remote from vehicle access roads, there is evidence of past travel in the form of off-road vehicle trails.
01152 Wonderful Peak	Natural integrity has been impaired by road developments, a dam which forms Copper Lake, mining excavation and exploratory pits, and thinning and pruning on a white pine plantation. Solitude is low due to the small size, permanent off-site intrusions, and only moderate topographic screening. Sixty-five percent of the scenic value is considered distinctive.
01202 Petty Mountain	There are no known structures or facilities within the area. There are vehicle trails and lookout sites. Topographic screening in some of the valleys offers a sense of solitude. Primitive recreation opportunities are moderate. Most recreation use is due to proximity to population centers.
X1204 Rattlesnake	From the top of the Gold Creek-Jocko Creek drainage there is an attractive view of the Mission Mountains. The sense of grandeur is somewhat lessened by the many cultural features visible from this vantage point. Solitude and primitive recreation opportunities are limited due to the easy access and the fact that this area is a narrow inclusion in an intensive timber management area. A portion of the area is considered grizzly bear habitat.

Roadless Area	Wilderness Attributes
1205 Reservation Divide	The area provides an awe-inspiring view from Squaw Peak of the Mission Range, Flathead Valley, Missoula Valley, and many lakes on the Reservation side. Solitude opportunities may be limited due to the narrow shape of the area with short core-to-perimeter distances. The area contains remnants of the sheep driveway trails used in the 1930's and 40's. Timber harvest activities outside the area are easily perceptible at most locations within the unit.
1209 Baldy Mountain	Baldy Mountain dominates the landscape in this unit. The upper summit is above the timberline and consists of rock ledges and scree slopes. The balance of the area is made up of the mountain slopes. In the southern portion, Hinchwood Creek separates Baldy Mountain from the adjoining hills. There are two small alpine lakes on the north side of the peak. As the trail crosses the mountain, it provides a variety of scenic vistas for the visitor. The area contains a lookout site which is currently in use. The topography offers the visitor an opportunity to experience a sense of solitude; however, the area is popular and receives moderately high use. Primitive recreation opportunities are good due to the open understory and high elevation of the area.
1220 Ward Eagle	There is an old cabin and evidence of an old dam on Hub Lake. Prospect diggings occur throughout much of the area. There is some evidence of early logging activities in Deer Creek. Because of the small size and easy access there is limited opportunity for solitude.
01301 Hoodoo	The area contains intrusions such as trails, cabins, past mining activity, firelines, lookout site, and a crashed airplane. The size of the area offers solitude and the area provides breathtaking scenery. The area is thought of and used for high quality dispersed recreation, with most activities related to consumptive and non-consumptive use of wildlife and fish values. Trails are unobtrusive to the natural appearance. The steep, rugged terrain provides challenges to the back country user.

Roadless Area	Wilderness Attributes
01302 Meadow Creek	Human activities have had a moderate impact primarily in the St. Joe drainage, Upper Cedar Creek, and the head of the North Fork of the Clearwater River. Evidence remains of turn-of-the-century gold and silver placer and dredge mining activities. Rock tailing piles along streams, diversion ditches, cabins and remains of cabins, and access roads are the principal detractions even though much of it has softened over the years through natural vegetation and erosion. Present day mining activities are more localized. A metal lookout tower is located on Illinois Peak. The majority of the rest of the area is relatively free of human impacts, even the trails appear natural and some minor grazing up to 1970 may still be evident in the meadows around Chamberlain Basin.
01424 Silver King	Although some impacts are present, there is not an overall influence on natural integrity in this area. Impacts include an old railroad bed along Brewster Creek, a few mining cabins, and old mines and diggings. The size of the area offers opportunity for solitude. Primitive recreation opportunities are moderate due to the high topographic screening combined with low distance from perimeter to core. The area is heavily influenced by external development activities and a double-circuit 500-kV transmission line is being constructed across the northern edge of the area.
01485 Bear-Marshall Scapegoat-Swan	Human intrusion in the area includes outfitter guide base camps, a radio repeater, lookout towers, telephone line, mineral prospects, all of which are abandoned. The size of the area along with topographic and vegetative screening allows solitude for the visitor. The scenic character of the land is similar to the adjacent wilderness area; it is transitional from the Seeley-Swan and Blackfoot Valleys to the mountainous features of the Bob Marshall. Opportunities for viewing grizzly bear and the possible existence of the gray wolf in the area contribute to its uniqueness. This area is adjacent to the first designated wilderness and has high emotional value for many people.

Roadless Area	Wilderness Attributes
01665 Cataract	The large amount of relief in the form of steep, relatively narrow canyons makes this roadless unit fairly scenic. Almost all the area is classified as grizzly habitat. Opportunity for solitude and primitive recreation is good due to the size of the area and the physical and vegetative screening. The distance from the perimeter to the core is relatively long and offers many physical challenges to the visitor. Access points to the area are limited.
01781 Marshall Peak	Except for scattered rock outcroppings, lush vegetation dominates the area. Access roads and trails are not well maintained due to the unstable terrain and very heavy brush. The area contains grizzly bear habitat. It is free of external influences because of the topographic and vegetative barriers. Development is near the boundary on the north, east, and south sides. No development will occur on the west border so long as the tribal council chooses to manage the area as wilderness.
01784 Cube Iron-Silcox	There has been little human influence on the natural integrity of the area. The unit contains some impacts including test pits for minerals, dispersed recreation sites, a lookout foundation, fence on the ground, mining and logging access roads. The extremely varied topography, wildlife, and vegetation are not affected by the human intrusions. There is a high opportunity for solitude. A large part of the area is considered essential grizzly bear habitat. Scenic values are many.
01785 Sundance Ridge	The topographic configuration of this area offers some opportunity for solitude; however, there are visible outside impacts. The ridge trail provides primary access and views along the entire route. About one-quarter of the area consists of private and State lands on which nonconforming activities occur.
X1786 Tepee-Spring Creek	Steep slopes, dense timber, and rough, rocky terrain characterize this area. Streams originating in the interior flow outward in all four directions. Human intrusions include helispots, a lookout, telephone line, water development, and the Silver King Mine. There is moderate opportunity for solitude due to the area's moderate size and off-site intrusions. The area is well dissected topographically and provides good screening.

Roadless Area	Wilderness Attributes
X1790 Mount Bushnell	Most of the area is heavily timbered; however, high open mountain parks, talus slopes, and brushy, south-facing slopes are scattered throughout. There are numerous streams and the only lake is a small marshy pond. Human developments include mining, cabins, and access roads. There is a corral at each of two outfitter camps, helispots, and an old lookout site. The size of the area contributes to a feeling of remoteness, particularly in drainages where outside sounds cannot be heard. Topography and vegetative screening mitigate intrusions.
01791 Cherry Peak	The area ranks moderate in opportunities for primitive recreation due to size and shape of the unit. Mountain peaks are high and the core of the area is generally less than 3 miles from the perimeter on the longest axis. There is some evidence of mining activities, a lookout foundation, helispots, and telephone wire. Geologic features associated with glaciation occur in the northern part. The area is not compact; fingers of previous development extend into the area causing "cherry stem" effects.
01792 Gilt Edge-Silver Cr.	There is remarkable scenery, severe topography, and abundant vegetative screening providing high opportunities for solitude even though there are many permanent off-site intrusions and perimeter roads. The area itself is intact with no major impacts. Opportunities for primitive recreation are considered moderate because of the short distance from the perimeter to the core of the area; however, diverse opportunities do exist. Vegetation and steep side slopes reduce access to the area. The area contains cabins and log flumes from turn-of-the-century logging activities.
01794 Patrick's Knob-North Cutoff	This area contains bighorn sheep habitat as well as valuable deer and elk winter range and some elk summer range. The small size of the area offers a limited opportunity for solitude. Little of the unit is remote and free from external influences. Human intrusions include a helispot, mining developments, a lookout site, and electronic site. Primitive recreation opportunities are moderate due to moderate diversity, the short distance from core to perimeter, and topographic and vegetative screening.

Roadless Area	Wilderness Attributes
01795 South Siegel-South Cutoff	Intrusions into this area include evidence of past logging, trail facilities, a mining cabin, and road. The terrain and small size of the area limit the need for primitive skills. Little of this area is free of external influences. A State highway and the Burlington Northern Railroad form part of the northern boundary. A double-circuit 500-kV transmission line is currently under construction through the western end of the area.
01796 North Siegel	The size of this area, and the topography does not provide particular inspirational values. Opportunities for solitude are low due to the short distance from the perimeter to the core; however, because of the highly dissected topography, some of the upper reaches of the canyons are secluded. Intrusions include a helispot and water ditch. Because the boundary is drawn to exclude a Forest Service Road, the area is not at all compact. This road effectively divides the unit into two linear parcels.
01798 Marble Point	There is moderate opportunity in this area for solitude because of the intermediate amount of topographic and vegetative screening. Some permanent off-site intrusions also impact the opportunity for solitude. Several historical examples of early mining and logging exist in the area. There is also evidence of burning for wildlife habitat improvements. External influences which impact the area include two timber sales, a newly constructed road, the railroad, and Interstate 90. Most of the boundaries are delineated by established roads. There is a 40-acre parcel of private land within the area.
01799 Sheep Mountain-State Line	The natural integrity of the area is only marred by an outhouse near Missoula Lake and old cabins previously used by miners or trappers which are in severe states of disrepair. Mineral exploration excavations are spotted throughout the area with a heavier concentration in the vicinity of Oregon Gulch and Mink Peak. The extremes of the elevations with the peaks, cirque basins, and lakes provide scenic landmarks for viewing within the area and from outside. Due to proximity to population centers, the opportunities for solitude and serenity are limited. However, from within the area, there are places where a visitor can experience the feeling of being alone due to topographic or vegetative screening.

Roadless Area	Wilderness Attributes
01800 Stark Mountain	Opportunities to view a natural-appearing area or opportunities for solitude are not abundant in the unit. Much of the area was logged in the 1920s and stumps are apparent. The size, shape, and topographical position of the area makes it difficult to escape from the sights and sounds of off-site human intrusions. The core of the area is generally less than 2 miles from the boundary. Existing roads and trails provide easy access to the boundaries and into the area.
01803 Burdette	Opportunities for primitive recreation are moderate due to a few low standard trails located in the area. There is not much topographic variety. The area was rated moderate for solitude due to moderate screening and some permanent off-site intrusions. Vegetative manipulation in the form of terracing for site preparation is visible in a part of the area. The unit is characterized by sharp ridges and steep draws with large areas of brush stands.
01805 Lolo Creek	This unit is significant because of its proximity to the Selway-Bitterroot Wilderness area. Possible conflicts include a proposed ski area, potential for electronic site development, and possible mineral development. A small ski run has been cut out by users along a portion of the Lolo Peak Trail. Several clearcuts and logging roads are visible outside the area. Although viewpoints from within include vistas of Missoula, Lolo, and Florence; there are too many off-site intrusions for any real solitude. The area receives heavy visitation, frequent air traffic, and noise from highways. Primitive recreation opportunities are very good due to steepness of terrain and rock cliffs. A few old miner's cabins exist plus an old lookout base.
01806 Welcome Creek	The area is contiguous to the Welcome Creek Wilderness area on the south. This roadless area is rated low for solitude due to the lack of topographic and vegetative screening. The distance from core to perimeter is extremely short in any direction. Access from the east is a challenge because of the dismantling of the Rock Creek cable crossing. This is a very small, compact unit bounded on the west by timber harvest units and on the east by private land and Rock Creek. The area is heavily impacted by sights and sounds of the outside logging activities and travel along the Rock Creek Road.

Roadless Area	Wilderness Attributes
01807 Quigg	Opportunities for primitive recreation and solitude are very good because of the abundant topographic screening and the non-motorized use of the area. The distance from perimeter to the core is 5 to 6 miles. There are a number of intrusions within the boundary of the area. The area is both large and compact. Vehicle traffic along the Rock Creek Road also causes some impacts on the solitide for those areas adjacent to it.
01808 Stony Mountain	The large size of the area plus the topographic and vegetative screening can create a sense of solitude. The landscape contains diverse topography ranging from heavily timbered slopes to park-like open spaces, steep slopes to undulating terrain, and craggy rock outcrops to thick forest duff. Active prospecting is taking place in Wyman and Williams Creeks which have resulted in small, open cuts. The new activity is fresh and noticeable. Early day placer mining for sapphires has been generally covered by natural revegetation. The area contains two old cabins and a helispot.
01809 Garden Point	The area rates low for solitude due to the small size and moderate screening. The area is not particularly compact and the distance from perimeter to core is no more than a mile and there is a road within 2 miles of any point within the unit. Some 400 acres of private land lie within the unit boundary; however, the boundary could be drawn to exclude it.
01811 Evans Gulch	Due to its small size, outside impacts are major factors. Most intrusions come from logging activities. There is a paved road on the Montana side. A dam has been constructed on Blossom Lake. Prospect diggings and old mining equipment are located in the area. The vegetative screening offers some opportunity for solitude and there are challenges in the form of cross-country travel on the subalpine ridges. Portions of the area are remote and relatively free from external influences.
X1812 Clear Creek	This area is both small and compact, and is well forested. Other than old mine workings and cabins there are no known structures or facilities in the area. The active mineral prospecting occurring in a significant portion of this small roadless area (in the upper basin) precludes opportunities for solitude. There is little contrast in vegetation.

Roadless Area	Wilderness Attributes
01814 Deep Creek	The area retains its natural appearance; no improvements are located inside the boundary. There is little physical contrast in the relatively broad flat basin, no awe-inspiring topography. The size of the unit is too small and the screening inadequate to allow much solitude. The area contains 200 acres of private land which could be excluded by a boundary adjustment or through land exchange. Most of the major communities and transportation routes can be seen from the boundary; transportation routes can also be seen from the ridge.

Table III-5: Summary of Resources by Roadless Area

		Acres		Selected Resources				
				Suitable Timber	Range	Minerals		Wildlife
Roadless Area	ID	Gross	Net			Hard-rock	O & G	
		Acres						
McGregor-Thompson	L1LAQ	30300	27850	22976	0	17941	27850	0
Maple Peak	01141	6960	6960	5470	0	6960	0	0
Stevens Peak	01142	700	600	148	0	600	600	0
Wonderful Peak	01152	1600	1600	968	0	1600	0	0
Petty Mountain	X1202	16980	16980	12510	370	6029	0	30
Rattlesnake	X1204	3310	2700	2570	0	0	2700	657
Reservation De.	X1205	16300	16300	11365	0	16300	16300	0
Baldy Mountain	X1209	6680	6680	5803	0	6680	6680	0
Ward Eagle	X1220	8570	8570	3654	165	8570	0	0
Hoodoo	01301	98680	98500	54283	0	34775	0	0
Med Ck Up N.	01302	7200	7200	1513	0	7200	0	0
Silver King	01424	13150	12840	8728	7720	12840	12840	0
Bear-Mar-S-Sw	01485	121940	120900	71654	800	25222	120900	107500
Cataract	01665	9900	9900	6784	8	9900	9900	8127
Marshall Peak	01781	9400	9400	6588	0	0	9400	9400
Cube-Iron	01784	39200	37700	22675	80	26502	37700	20930
Sundance Ridge	01785	9440	7220	5973	0	0	7220	3199
Tepee-Sp. Creek	X1786	15250	14890	9982	31	5970	14890	14890
Mount Bushnell	01790	43070	43070	40902	2344	29290	43070	0
Cherry Peak	01791	39800	39640	27199	700	32080	39640	3000
Gilt-Edge S. Cr.	01792	11200	11200	9386	267	11200	0	0
Pat. Knob-S. Cr.	01794	18800	17200	12107	1037	17200	17200	7100
S.Siegel-S. Cr.	01795	15600	14800	13762	1675	13034	14800	6000
North Siegel	01796	10200	10000	8232	100	10000	10000	2400
Marble Point	01798	13210	13210	10852	370	6445	0	0
Sheep Mtn.-S. L.	01799	40700	40500	27321	410	39395	0	400
Stark Mountain	01800	14140	14140	11825	500	13997	14140	0
Burdette	01803	16380	16360	15500	0	1516	0	0
Lolo Creek	01805	16160	14660	10154	4880	14660	0	0
Welcome Creek	01806	1100	1100	319	0	1100	1100	0
Quigg	01807	69820	69820	27755	565	69820	69820	0
Stony Mountain	01808	34930	34930	17198	0	12585	34930	0
Garden Point	01809	6900	6500	6469	370	6500	0	0
Evans Gulch	X1811	8830	8830	6681	0	8830	8830	0
Clear Creek	X1812	5470	5470	5017	75	5470	5470	0
Deep Creek	X1814	8170	7970	7255	0	2793	0	0
TOTAL		790040	776190	511578	22467	483004	525980	183633

4. Visual Quality

About 30 percent of the Forest outside of wilderness is considered to have distinctive scenic quality. Portions of the Forest are seen by about 100,000 residents--over half the population of western Montana. In addition, parts of the Forest can be viewed from about 280 miles of Federal or State highway corridor, with a daily average use of around 20,000 vehicles. At the present time, about 80 percent of the Forest has a relatively natural appearance.

Three different visual inventory systems were used on various portions of the Forest. This reflects the improvement of procedures and changes made during development of the current inventory system. These older visual objectives are not readily adaptable to the current system, but the following interpretation can be made. The recommended visual quality objectives (VQO) were generally incorporated into the unit plans where these were completed. In other areas, the visual quality objective was determined on a project basis rather than at a planning level and resulted in some inconsistencies of the type normally associated with a fragmented analysis. However, the main travel routes retained the Retention and Partial Retention Visual Quality Objectives, and were responsive to maintaining a natural-appearing landscape for most users of the Forest.

5. Wildlife

The Forest contains several distinct habitats that are important to different groups of wildlife species. Even with many overlaps between habitat and the wildlife present, there are specific habitat requirements for most of the groups. Wildlife populations will be proportional to the quantity and quality of the habitat, as presented in the following discussion. The indicator species will be monitored because they are sensititve to management activities or are of special concern, such as the elk. Appendix B-2 provides additional information on indicator species.

Table III-6: Representative and Indicator Species of Wildlife Groups on the Lolo National Forest

Species Group	Representative Species	Indicator Species
General Forest	robin, coyote	-
Shrub Users	yellow warbler, mtn. cottontail	-
Grass-Forb	Columbian ground squirrel, pheasant	-
Riparian Coniferous	dipper, ruffed grouse	-
Tree Dependent	western tanager, porcupine	-

Table III-6 continued

Species Group	Representative Species	Indicator Species
Mature Old Growth with Limited Management	pileated woodpecker, snowshoe hare	pileated woodpecker
Natural Old Growth	goshawk, fisher	goshawk
Snag Users	hairy woodpecker osprey	-
High Rock	grey-crowned rosy finch, pika	-
Big Game	elk, deer, moose, bear	elk
Threatened and Endangered	grizzly bear, peregrine falcon, bald eagle, gray wolf	all

Big-Game Species Habitat - The Forest has a large share of western Montana's elk habitat that supports an elk population of national significance. Currently, populations of elk and deer on the Forest are estimated at from 66 to 75 percent of potential, based on habitat effectiveness. Intermingled landownership and use, the effects of past timber management activities, and the previous lack of recognition of elk-timber relationships in the decision making process have resulted in poor distribution of cover and foraging areas and relatively low forage production. Transportation systems developed for timber management activities have contributed to loss of effective habitat, diminished opportunities to view big game, and tend to concentrate hunters in certain areas.

Nongame Species Habitat - Nongame species most likely to be affected by activities and practices needed for multi-resource management include those species that require stands of old-growth timber and snag-using species. At the present time, the natural population dynamics are not affected by any inadequacy of habitat.

Threatened and Endangered Species - Grizzly Bear: The past century has seen drastic declines in grizzly bear populations on the Forest, somewhat leveling off in recent decades. The principal factor for this decline has been man-caused mortality. This has been due to both deliberate shooting based on the bear's historic "varmint" status, and habitat modification which inadvertantly exposed grizzly bears to human contact which resulted in accidental or deliberate grizzly bear killings. The future of the grizzly bear looks considerately better. Legal harvest of the bear is now highly regulated. Illegal harvest has been minimized. Habitat modification is now done with constraints that minimize potential grizzly bear mortality factors. Of the two grizzly bear populations on the Forest, including the Cabinet population and the North Continental Divide population, the latter may be approaching recovery (to nonthreatened status). Populations in the Cabinet Mountains, however, still appear to be significantly below viable levels. Population augmentation (restocking) may eventually be needed in this area to recover the bear to nonthreatened status.

The current number of grizzly bears on the Forest is unknown although estimates for both the Cabinet-Yakk and North Continental Divide ecosystems run in the range of 6 to 14 bears. The Forest averages about 5 to 20 sightings per year. There are 424,310 acres of occupied habitat on the Forest, of which 320,934 acres are considered essential for recovery. Total occupied habitat represents 20 percent of the Forest's total acres. Although the Lolo spans two ecosystems, it has one of the smaller amounts of occupied grizzly habitat in the Region.

Peregrine Falcon: Peregrine falcon populations sharply declined in past decades. Several years ago this trend reversed Nationwide, primarily as a result of hacking (releasing artificially reared juvenile birds), and populations are now increasing. Pesticide use, illegal killing, and illegal taking by falconers affected populations; habitat availability has not influenced populations. Peregrine falcon habitat exists on the Forest, but it is currently unoccupied.

Bald Eagle: Bald eagle populations on the Forest appear relatively stable. While a few eagles do nest on the Forest, most of the Forest's eagles merely "winter" here, being part of the Canadian population which is not considered endangered. The Forest provides more bald eagle habitat than is currently occupied.

Gray Wolf: Wolf populations on the Forest have declined during the past century. The current population status and trend of this species is relatively unknown. Population declines are primarily caused by predator control programs, indiscriminate shooting and trapping, and changes in land use patterns. Currently, coyote control programs on adjacent private lands continue to pose a threat to whatever wolf populations may exist.

6. Aquatic Environment/Fisheries Habitat

Riparian areas consist of streamside and lakeside ecosystems, aquatic ecosystems, wetlands, and flood plains. Riparian areas comprise the most valuable components to watershed, wildlife, and fisheries resources. Undisturbed, they filter sediment from adjacent lands and serve as an interchange between subsurface and surface aquifers. Flood peaks are dissipated by bank storage and flood plain dispersion of water. Stream channels are shaped by the resistance of the soil material and root systems of terrestrial vegetation. This vegetation provides large debris that contributes to pool structure and dissipates stream energy. The vegetative canopy also moderates water temperatures and provides a nutrient and food link from terrestrial to aquatic systems.

Although riparian areas comprise a small percentage of the Forest, they receive a disproportionate share of use. Historically, transportation systems have paralleled streams in riparian areas because of ease of construction and proximity to large-sized trees and high timber volumes included in timber harvests. Most grazing allotments include riparian areas that concentrate livestock use due to lush vegetation, flatter terrain, and proximity to water. Soil compaction and streambank alteration frequently occur from this concentrated use. Recreationists are attracted to the natural features of riparian areas, and most developed sites are located near surface waters. Dispersed recreation use is high, with fishing, hunting, camping, picnicking, cross-country skiing, and wildlife observation being common activities. Placer mining without reclamation controls have occurred in many riparian areas, and serious onsite and downstream damage resulted.

The Forest's aquatic habitat is characterized by an abundance of headwater streams and lakes that flow into four major rivers. Most fishable streams occur in fourth-order and larger drainages, although second- and third-order drainages provide spawning and rearing habitat for downstream fisheries. About 3,500 miles of fishing streams exist on the Forest. Climate, steep stream gradients, low to moderate nutrient levels, and limited pool quantity and quality largely limit productivity.

The Forest has 96 lakes that either support or could support a fishery. Physical conditions of some of the lakes require periodic stocking to maintain a fish population. The Forest has many small lakes and marshes that do not support fish, but which do provide habitat for an abundance of diverse vertebrate and invertebrate lifeforms.

Game fish of major importance on the Forest include cuttthroat trout, rainbow trout, rainbow-cutthroat hybrids, brook trout, bulltrout, and mountain whitefish. In addition, at least six other game fish species and seven nongame fish species occur. Populations of these fish Forest-wide are below full potential due to habitat modification associated with past land-disturbing activities, road construction, mining activities, grazing activities, and recreation site development. Fish now occupy at least 95 percent of the Forest's suitable habitat.

Forest-wide, the game fish population is probably relatively stable; however, the number of larger-size fish has been reduced due to excessive fishing access. Most roads in riparian areas remain open to vehicle use during fishing season. Available literature documents the decline in a fishery with parallel road access due to overfishing. Cutthroat trout are especially vulnerable to over fishing, and cutthroat represent the most widely distributed and abundant game fish species on the Forest. Declines up to 75 to 80 percent of the catchable-sized cutthroat population have been documented in streams with parallel access and no special fishing regulations.

As with wildlife, the fish species have been grouped and an indicator species is designated for the group which is most sensitive to management activities or of special concern.

Table III-7: Representative and Indicator Species of Fish Groups on the Lolo National Forest

Species Group	Representative Species	Indicator Species
Cutthroat trout	westslope cutthroat, sculpin	invertebrates (sediment-sensitive)
Other salmonids	bull, rainbow, brown trout	
Nonsalmonids	whitefish, squawfish, suckers	

Wetlands on the Forest occur only in the Seeley Lake area and in scattered parcels along the Clark Fork River.

7. Range

During the 1980 grazing season, 71 grazing permits were issued, authorizing approximately 2,100 cattle and horses to graze for about 10,300 animal unit months (AUM's) and authorizing 1,800 AUM's of nonuse. In addition, an estimated 400 head of pack and saddle animals were allowed to graze about 900 AUM's under "free use" for recreational and administrative purposes. Permits were also issued to allow an additional 1,100 head of livestock to graze approximately 5,900 AUM's on waived private lands located within National Forest range allotments. Although grazing is not a major use on the Forest, it is important to the ranchers and outfitters who depend on it. Often the National Forest System land is an integral part of a much larger grazing unit involving private, State, and industry-owned lands. This grazing is also important because ranchers are able to remove livestock from meadows for 3 to 4 months to produce a hay crop, thereby helping to sustain ranch operations by creating more economical units.

Currently, there are 128 range allotments on the Forest. Fourteen of these are wilderness packstock allotments. Outside wilderness, 65 allotments (60 percent) are active and 49 allotments (40 percent) are inactive. The vegetative conditions on the existing grazing allotments is rated good on 69 percent and fair on 31 percent of the suitable Forest grazing land. The trend in vegetative condition has been stable on 84 percent and upward on 16 percent of the suitable grazing acreage.

During the period from 1975 to 1980, the number of active grazing permits on the Lolo Forest has declined by 29 percent. There are several reasons for this reduction. Property values have increased, bringing about a more rapid turnover of ranches. Several ranches have been subdivided into homesites and small parcels. High cattle prices have made it difficult for a few permittees to purchase cattle, and grazing capacities of several allotments have been gradually reduced by natural changes and other influences that include:

- Decreased grass/forb production through plant succession.
- Subdivision of adjacent land makes allotment inoperable.
- Overuse of sensitive riparian zones by livestock and big game.
- Livestock conflicts with wildlife needs.
- Noxious weed invasion.

The decision to reduce permitted livestock numbers has been made by the Forest Service through analysis of the range allotments (Appendix B, Proposed Forest Plan). These reductions were made in consideration of the conflicts between wildlife and livestock for use of the forage, and many allotments are located primarily in riparian areas that are highly productive, but sensitive and small in size.

8. Timber

From 1975 through 1979 the average annual volume of timber sold from the Forest was 98.5 million board feet (MMBF). In addition to timber programmed for sale, about 20 to 28 MMBF of firewood and other dead and down materials are removed from the Forest annually.

The Forest supplies timber to several large- and small-capacity lumber mills in western Montana. Several speciality product mills such as post and pole yards and cedar mills are supplied by Forest timber. Firewood, pulp, and hog fuel products are also removed for use in local mills and business.

Commercially important tree species on the Forest include ponderosa pine, Douglas-fir, lodgepole pine, western larch, Engelmann spruce, grand fir, subalpine fir, and western red cedar. Productivity of the Forest's commercial forest lands ranges from 20 cubic feet per acre per year in warm, dry pine-bunchgrass types to 164 cubic feet per acre per year in warm, moist western hemlock types. Currently, about 20 percent of the Forest is in the 60- to 90-year age class; most of this on the west half of the Forest as a result of vegetative succession following the 1890 through 1920 fires.

A significant proportion of the vegetation treatment on the Forest is accomplished through the timber program. Experience has demonstrated that the timber program is an effective method of managing the Forest to meet other resource objectives. This is not readily apparent, however, when looking only at the cost of preparing timber sales as compared to the bid value of the products sold.

Listed below, using Fiscal Years (FY) 1978 and 1983 as examples, are the costs of preparing land for treatment on which 120 million board feet of timber were prepared for sale in FY 1978 and 100 million board feet in FY 1983.

	FY 1978 M$	FY 1983 M$
Total Sale Preparation with Road Costs	5,796	5,234
(Sale Preparation)	(1,134)	(1,398)
(Road Survey and Design and Construction allowance)	(4,662)	(3,836)
Timber Sale Bid	6,952	2,852

When comparing these 2 years, it appears that the Forest experienced a "profit" of $1,156,000 in FY 1978 and a "loss" of $2,382,000 in FY 1983 from the timber program. This simple comparison ignores the benefits of meeting total resource objectives.

One thousand acres of the 9,900 acres treated in FY 1983 occurred in Sanders County where the treatments helped control a major mountain pine beetle infestation, salvaged the dead and dying material, and improved the wildlife habitat. On the remaining acres treated, the timber prescriptions were designed to increase water yield within acceptable water quality standards, to improve both summer and winter wildlife habitat, to reduce the risks of insects and disease, and to provide for motorized dispersed recreation. If these same acres were treated to meet these other resouce objectives without timber harvest the cost of meeting these objectives would exceed the apparent loss attributed to the timber program as shown above. The timber sale program is a cost effective method of meeting multiple resource objectives.

In addition to ignoring benefits of resource protection, a one year display of costs and returns can be very misleading. Fiscal year 1978 was a period of strong timber demand which resulted in relatively high timber values and road construction costs. In FY 1983 the country was just coming out of a deep recession and timber values were depressed leading to a loss when timber returns are compared to sale preparation and road costs. Sales prepared in 1978 when timber demand was strong, were sold 5-7 years later when market conditions were significantly different. In addition, roads built in 1 year provide access for future timber management, yet such benefits to future management are not displayed in a single year of data. Timber management on the Lolo Forest is a long-term situation which requires cost and revenue information over an extended period to get an accurate representation of the true economic implications of management. The discounted flow of net revenue (PNV) over many decades is the best way to show the economic impacts of timber management. The PNV of each alternative and benchmark is displayed in Chapter II where the benchmarks and alternatives are discussed in detail.

Productive forest lands currently unsuitable for timber production fall into three classes, each of which offers different opportunities. The three classes reflect physical, existing management, and economic constraints. Lands are physically unsuitable if they cannot be restocked within 5 years or if they cannot be harvested with present technology without irreversible damage to soil or water resources. This classification may change in the future if research finds ways to achieve regeneration or if harvest methods are developed that afford protection to the soil and water on these currently unsuitable lands.

Lands are unsuitable due to management constraints such as existing legislation, administrative regulations and objectives, or research needs. These lands may also be reclassified at some future date as the needs of people and management objectives change. Finally, lands that are unsuitable due to economic conditions can become suitable if demand forces timber prices up or ways are found to accomplish timber management at a lower cost. Appendix B displays the criteria and acreage tentatively suitable for timber production. This acreage is then subject to change by alternative as it is influenced by the management direction and land assignments of a particular alternative.

9. Water and Soils

Nearly half of the 42 inches of average annual precipitation that falls on the Forest's watersheds is released as streamflow. About 3.5 million acre-feet of water per year flow through almost 10,000 miles of stream channels to the Clark Fork River. The chemical water quality of streams on the Forest is generally excellent. The water quality contaminant most associated with land management is sediment. Compared to chemical parameters, sediment is naturally highly variable, both within a given watershed and between watersheds. Two soil types on the Forest are particularly susceptible to water-related erosion and sedimentation -- the decomposed granitics and the lakebed sediments of glacial Lake Missoula. When disturbed, sediment yielded from these landforms increases significantly over natural levels. However, specialized techniques in project design, layout, construction, and maintenance, along with immediate stabilization efforts, can control 90 to 95 percent of potential sediment. These techniques require increased dollar and manpower costs. The sediment-carrying capacity of a stream increases with the volume of discharge. If flow increases, the stream either carries more of the sediment added to the channel, or exploits a weakness in the channel bed or banks. In general, an 8 percent increase in yield is considered acceptable for most streams on the Forest that have a "fair" channel stability rating (Vegetation Manipulation Guidelines, April 1973. USDA, Forest Service; Lolo National Forest, Revised, 1979). Most streams on the Forest rate in the "fair to good" range. Road construction, grazing, and placer mining have impacted some of the Forest's water resources.

Man's activities in the forest generally result in increases in water yield. Increased water yield can only benefit downstream users if the increase is available when needed. However, there is insufficient storage in the river system to take advantage of the increase, and because it occurs primarily in the late spring-early summer, it has the potential to cause sedimentation and downstream channel drainage. Research shows that the increased spring flows do not equate to lower late season flows (Hoover 1969, Leaf and Brink 1972). In the spring there are excess amounts of water for local livestock, irrigation, and municipal use. This is also the period when there is excess water in the Pacific Northwest hydroelectric generating system. As with recreation, excess supplies of output have no value. A comparison of average annual water use and average discharge (Table III-8) substantiates the assumption that there is currently a large excess supply of water from the Forest. Because of the excess supply, changes in the amount of water that result from Forest activities are not of importance in a demand-supply context.

Table III-8: Annual Water Use 1/ and Average Discharge 2/- Columbia River Basin 3/

Irrigation		Uses Other 4/ Than Irrigation		Basin Total		
Withdrawal	Depletion	Withdrawal 5/	Depletion 6/	Withdrawal	Depletion	Average Discharge
2,210	1,040	172	46	2,382	1,086	26,610

1/ Source: DMRC; April 1975, Water Use in Montana, pp. 7-11. These estimates are based upon 1970 water use data.

2/ Source: USGS; 1977, Water Resources Data for Montana: Water Year 1976.

3/ Columbia River Basin figures combine estimates for the Kootenai River and Clark Fork of the Columbia River in Montana.

4/ Uses other than irrigation include thermal-electric energy production, self-supplied industry, municipal and industrial, livestock, and rural domestic water use.

5/ Withdrawals are from both surface and ground water sources.

6/ Nonirrigation depletions are estimated by applying Statewide average depletion rates for each nonirrigation use to the level of withdrawal for that use in each basin.

In contrast, for the local situation, many tributaries to the Clark Fork are overappropriated for off-Forest uses. As the State of Montana adjudicates water right holdings, there will be more demand on all sources of water. Certain quantities of water are required to meet National Forest needs and uses and will be maintained by State adjudication, Federal/State compacts, or through water use limitations in Federal permits. National Forests have a right to quantities of water and these will be contested during adjudication. Within this decade, there will be demands on water originating on the Forest which will probably not be satisfied from individual watershed.

10. Minerals

Current mineral-related activity within the Forest is associated with the search for energy (leasable) minerals and hard rock or placer (locatable) minerals. An increase in leasable and locatable mineral activity by corporations and individuals is expected as a result of the Nation's increasing mineral and energy needs. The national goal of energy and mineral self-sufficiency will also spur increased exploration activity within the Forest.

Much of the Forest lies within the Overthrust Belt, a geologic province extending from Mexico to Canada. Recent oil and gas discoveries along this belt in Utah and Wyoming have focused attention of the petroleum industry to this area. As of September 1985, 920,000 acres of the Lolo Forest lands were under lease. Applications are pending on an additonal 290,000 acres.

Existing oil and gas leases have been processed under the guidelines of the Lolo National Forest Environmental Analysis (EA) on oil and gas leasing which covers all lands on the Forest except those designated as wilderness or recommended for inclusion in the wilderness system through the RARE II study. This programmatic EA is incorporated into this EIS by reference. Site specific stipulations to protect surface resource values are found in Appendix F.

Additional oil and gas lease applications both within and outside of wilderness are anticipated. The information document, "Oil and Gas Activity in the Northern Region", goes into detail on the leasing laws, Forest Service responsibilities in protecting other resource values, exploration and production activities, and the social and economic effects of development.

Locatable mineral activity is governed by the 1872 Mining Law. It allows any citizen the right to enter open public land to prospect for, locate, and develop the mineral resources therein. This right is not, however, without limits. Under the provisions of the Forest Service Surface Management Regulations (36 CFR 228), the mining claimant must present a plan of operation outlining what exploration or development steps are anticipated. A review of the plan is made to determine if the proposed action is the next logical step in developing a mine and if special stipulations need to be made to protect or mitigate the plan's effect on other resources. All approved plans must include provisions for reclamation. The following itemizes the major operating or developing mines on the Lolo National Forest.

Table III-9: Major Minerals Operations on the Lolo National Forest

Property Name	Operator	Location	Commodity
Nugget Claims	Eddy Peak Mining Co.	sec 23, T16N, R23W	gold-placer
Lubelle Claim	Clay Lewis	sec 21, T17N, R24W	gold-placer
Keystone Mine	Silver Lite Mining Corporation	sec 27, 34, T18N, R26W	gold, silver-lode
Nancy Lee Mine	Nancy Lee Mining Co.	sec 31, T18N, R26W	silver-lode
Liver Peak	Noranda, Inc.	sec 29, T22N, R28W	copper-lode
USA Property	U.S Antimony Corporation	sec 19-20, 29-30, T21N, R31W	antimony-lode
Ward Lode	Ward Development Co.	sec 21, T11N, R22W	copper, gold silver-lode

The present and past locatable and leasable activity could provide an opportunity to improve the Forest's inventory of mineral potential which would be useful in analyzing and assigning land uses. However, because of the highly competitive nature of the mineral industry, much of the site specific data obtained during exploration is closely guarded by the companies. As a consequence, this unavailability of mineral information causes the Forest's mineral inventory to be very generalized.

11. Human and Community Development

Human and community development activities include programs that assist people and communities while enhancing Forest management. Assignment and scheduling of outputs in any of the alternatives will not directly affect these programs, including their budgets.

Programs encouraging hiring of women, minorities, and persons with low incomes are supported.

Youth Conservation Corps (YCC) has been reduced to a very low level. The Young Adult Conservation Corps (YACC) was phased out during Fiscal Year 1981, decreasing the inherently larger proportion of women and minority employees in that program. Several Older Americans are employed in the District and Supervisor's Offices under a special program.

Emphasis on service expands opportunites for all persons, including the elderly and handicapped, to use the Forest. The Forest is presently accessible to lower income groups and senior citizens who use the land for recreation as well as firewood gathering. Some developed campgrounds and picnic areas on the Forest provide recreation opportunities for the elderly and handicapped. Some developed sites and trails accommodate handicapped visitors.

The Forest co-sponsors annual environmental education workshops offered for graduate credit through the University of Montana, for teachers. Approximately 50 to 70 western Montana teachers attend the 3-day session, conducted by Forest and other resource management agency personnel.

12. Lands

Over 500,000 acres of private and State lands occur within the Forest boundary. During the past two decades, the Forest's land management emphasis has responded to a series of social and economic changes including accelerated subdivision, demand for services such as power and communications facilities, stronger cooperative actions with large landowners, expansion of communities in the Forest area, management of Forest areas through legislated designation, and development of the Forest.

A portion of the Blue Mountain Recreation Area is within that part of the Fort Missoula Military Reservation reserved as an addition to the Lolo National Forest under Executive Order 10403, November 5, 1952. That order provided "...that such lands shall remain subject to the unhampered use of the Department of the Army for purposes of national defense." The order further provides for continued applicability of Army rules and regulation "except as otherwise provided by agreement between the Secretary of Army and the Secretary of Agriculture."

a. Special Uses

In 1983, the Forest administered 571 special use permits: 90 for ditches, dams, and water sources; 285 for roads; 44 for recreational occupancy; 126 for utilities and communications; and 26 other types of use, including ski areas, lake resorts, etc.

b. Rights-of-Way Acquisition

Rights-of-way are acquired by the Forest from public and private landowners for roads and trails. Annually the Forest completes about 25 road and trail rights-of-way. Road rights-of-way are primarily acquired in connection with timber sales.

c. Property Boundary Location

About 6,200 land survey corners define the Forest's property lines, and 3,009 miles of Forest property line border private land. The location of boundaries has averaged 42 miles annually, although needs vary with the level of Forest development.

d. Cost-Share Agreements

Agreements are negotiated between the Forest and private land managers for sharing the costs of road construction and maintenance. About 20 percent of the land within the Forest boundary is in private ownership, and consequently annual needs vary.

e. Landownership and Adjustment

Consolidation of ownership is a major problem on some areas of the Forest. There are several large geographical areas of checkerboard ownership involving intermingled privately- and Federally-owned lands. Corporate landowners include Plum Creek Timber Company, Burlington Northern Corporation, and Champion Timberlands.

Annually, the Forest processes about 25 exchange proposals to improve management of public lands. The recent acquisition of 9,767 Wilderness acres and 11,013 National Recreation Area acres from the Montana Power Company and Burlington Northern in the Rattlesnake National Recreation Area and Wilderness responded to legislation establishing the area.

13. Roads

About 5,440 miles of inventoried system roads, which are considered necessary for resource management activities, exist on or adjacent to the Forest. Of the 5,440 miles, about 420 miles are classed as Forest arterials, 3,000 miles as Forest collectors, and about 2,020 miles as local roads. Besides these inventoried road miles, about 1,800 miles of old logging spur-type roadways exist. These roads were built originally as "temporary" facilities, but half (about 900 miles) appear to have some value for future resource access and utilization needs.

The arterial road system on the Forest is almost complete, and about 75 percent of the collector system is in place. Most future construction will be local roads since that part of the system is only about 20 percent complete. In the past, most road construction was accomplished by the timber purchaser. Recently, there has been an increase in preroading of timber harvest areas using capital investment funds.

The arterial and primary collector roads are seldom closed to public use except during emergencies. Road standards and location are based on mobility and travel efficiency, rather than specific resource management service. Secondary collector roads may be closed intermittently to achieve specific resource goals such as to reduce stress to elk on their winter range. Local roads, also commonly called project or resource roads, are now normally closed when project work is complete. The location and standard are determined by the requirements of a specific resource activity rather than travel efficiency. The travel plan process, and its attendant public involvement, is used to determine which roads should be open or closed to public use. This plan is reviewed annually and revised as necessary.

14. Protection

Wildfires and insect epidemics have played a major role in the development and present condition of the Forest. They will continue their influential role in the future.

a. Fire

Historically, fire has been a frequent occurrence on the Forest; all major vegetative types evolved with lightning and man-caused fires. Cyclic fires played a variety of roles including seedbed preparation, nutrient cycling, maintaining seral vegetation, providing favorable habitat for some wildlife species, maintaining a mosaic of age classes and vegetative types, reducing susceptibility of vegetation to some types of insect and disease attacks, and reducing heavy, continuous fuel loads.

The Forest accomplishes about 1,000 to 2,000 acres of prescribed burning annually for wildlife habitat maintenance, understory burning, and backlog slash burning. An additional 3,000 to 4,000 acres of prescribed burning is done annually for site preparation and slash disposal.

Data compiled for the period 1960 through 1979 indicated an average of 180 lightning and accidental man-caused fires. The percentage of man-caused fires increased during the past 5-year period.

The means to achieve optimum winter range effectiveness lies in the use of prescribed burning and timber harvest to renew browse productivity and achieve proper cover/forage ratios.

The organization of fire management activities on the Lolo is strongly influenced by landownership patterns and boundaries between major resource assignments within National Forest System lands. The probability that any fire might cross one of these boundaries and the lack of authority to prescribe fire or allow a fire to burn onto other ownerships makes it necessary to designate fire management units. These units do not conform precisely to management areas identified in the proposed Forest Plan. These units are described in detail in the Fire Management Plan Appendix (found in the Proposed Forest Plan Appendices). The fire management units are designed to provide use of prescribed fire to achieve management objectives and allow a range of suppression responses to wildfires to protect values at risk, using least cost plus net value change guidelines.

b. Insect and Disease

A significant timber loss is occurring in some drainages on the Lolo Forest from epidemic infestations of the mountain pine beetle and associated mortality of lodgepole pine. Forest-wide, it is the most serious insect pest. Scattered infestations can be found in both lodgepole and ponderosa pine types on most Districts throughout much of the Thompson River drainage. The most serious outbreak remains on the Plains/Thompson Falls Ranger District.

Infested acres on the Plains/Thompson Falls District increased from 5,500 in 1979 to more than 12,000 in 1980. This does not include an additional 26,600 acres of infested lodgepole and ponderosa pine in the Thompson River drainage on State and private land (including Thompson River State Forest). These acres are comprised largely of three major infestations: the upper Fishtrap drainage, Thompson River, and McGregor-Thompson (lands north of McGregor Lake).

Infestation on the upper Fishtrap drainage covers approximately 9,900 acres (including Federal, State, and private land). Federal land management activity to reduce losses has been concentrated in this area with removal of 16.9 MMBF of infested or high-hazard green lodgepole from Fishtrap and Lazier Creeks. Severe tree-killing in the Thompson River drainage occurs north of the Little Thompson River where an estimated 20 MMBF of infested or high-risk lodgepole exists. Most mortality is occurring on the Murr Creek and North Fork Murr Creek drainages. Little stand management is underway due to the area's essentially roadless nature.

Notable increases in beetle infestations are still being observed throughout the Thompson River drainage. Where harvesting has been concentrated, beetle populations are dropping in responce to a depleted food supply. Other high-hazard and unroaded stands are experiencing build-ups in beetle-caused mortality. Data from 150 variable radius plots scattered throughout the area indicated an average of 27 trees per acre were killed in 1980. This represents nearly a 3:1 increase from 1979. The infestation is expected to continue its spread until susceptible host trees are killed or removed.

Present management plans on the Plains/Thompson Falls District include increasing efforts to hazard-rate remaining lodgepole stands and accelerate harvesting to remove the most susceptible stands. Hazard-rating is completed on approximately 33,000 acres. In areas surveyed, 6,300 acres are rated high-hazard; 6,300 acres moderate-hazard; and 20,200 acres rated low-hazard.

Widely scattered ponderosa and lodgepole mortality was observed on both the Missoula and Ninemile Ranger Districts. Some 50- to 100-tree groups of beetle-killed pines and extensive stands of uninfested, yet susceptible trees, indicate the potential for increased mortality is high. Beetle populations on the Seeley Lake Ranger District appear to be static, but much high-hazard lodgepole pine remains on the District.

In recent years, moderately severe infestations of western spruce budworm have occurred in Douglas-fir stands throughout the Forest. During 1980, climatic factors apparently reduced budworm populations Forest-wide. Budworm activity may increase in the near future in response to drier conditions now prevalent throughout this Region. If expectations are realized, increased defoliation along with subsequent growth loss and topkill, and damaged cone crops will result.

Dwarf mistletoe infects 17 percent of lodgepole pine stands, causing a Forest-wide growth reduction of slightly more than 3 million cubic feet per year. Damage is most severe in unmanaged old growth stands and in young stands established under an infected overstory. Losses can be reduced through silvicultural treatments.

Root disease centers occupy more than 1 percent of the commercial forest land (20,000 acres) on the Forest. Many stands also contain extensive single tree and small group mortality caused by root disease/bark beetle complexes. Douglas-fir and grand fir are most susceptible, but all conifers are affected by one or more root pathogens.

15. Air Quality

The Clean Air Act established wildernesses as Class I air quality areas. Protection of air quality will be a critical factor in the management programs for the Forest's wildernesses. Protection of air quality in Class I areas will also be a major consideration in fuels management programs adjacent to wilderness areas.

Because of frequent temperature inversions in the Missoula Valley, a cooperative effort between local, County, State and Federal agencies has led to limitations on burning to protect and improve air quality. Daily air quality and weather influencing conditions are addressed and included in prescriptions allowing burning in the area in accordance with the Montana Airshed Group and Cooperative Smoke Management Plan.

CHAPTER IV - ENVIRONMENTAL CONSEQUENCES

This chapter forms the scientific and analytic basis for comparison of the alternatives, including the proposed action, described in Chapter II. Environmental consequences are the expected effects of activities scheduled on the ground. The emphasis of this chapter is to display the effects of resource activities on the environment. As an example, the discussion is presented in terms of the effects of timber management or other resource activities on environmental properties such as soil and water. Economic and social effects are discussed where applicable.

The consequences are described as quantitative or qualitative changes from the current situation in terms of significance, magnitude, and duration. The discussion identifies consequences that are direct, indirect, cumulative, or unavoidable. The relationship of short-term use of resources to long-term productivity is also discussed along with irreversible and irretrievable commitments of resources.

Mitigation was an important consideration in the formulation of standards, prescriptions, and minimum management requirements associated with each of the alternatives. These items are discussed in other parts of this document or in special sections of the appendices and will not be repeated here.

This chapter is presented in a way which attempts to avoid redundant statements. For instance, the specific activities scheduled to improve fish habitat are limited to a few acres and the discussion is short. However, the efforts to protect or improve fish habitat are included in several other categories (timber, roads, grazing, etc.) and the effects on fish habitat are included in those activity discussions.

The following changes and additions have been made in this chapter between the Revised Draft EIS and Final EIS.

The grizzly bear discussion has been expanded to include effects of forest management on the grizzly bear in different management situations (access, cumulative and habitat effects).

The section on the effects of timber management has expanded discussions on silvicultural systems, logging methods, clearcut size, site preparation, reforestation, and timber stand improvement.

The minerals section has been expanded to describe environmental effects of mineral development. A clearer differentiation has been made between mineral development and oil and gas leasing.

The cultural resource section has been expanded to include discussion of the effects of forest management. The discussion emphasizes the future direction of management of the cultural resource program.

A discussion of energy conservation and the effects of energy consumption on forest management has been added. The impacts of energy consumption by the alternatives have been included.

Current management plans on the Plains/Thompson Falls District include continuing efforts to hazard-rate remaining lodgepole stands and accelerate harvesting to remove the most susceptible stands. Hazard-rating is completed on approximately 37,000 acres. In areas surveyed, 6,500 acres are rated high-hazard, 8,800 acres moderate-hazard, and 20,200 acres rated low-hazard.

Widely scattered ponderosa and lodgepole mortality was observed on both the Missoula and Ninemile Ranger Districts. Some 50- to 100-tree groups of beetle-killed pines and extensive stands of unthinned, yet susceptible trees, indicate the potential for increased mortality is high. Beetle populations on the Seeley Lake Ranger District appear to be static, but much high-hazard lodgepole pine remains on the District.

In recent years, moderately severe infestations of western spruce budworm have occurred in Douglas-fir stands throughout the Forest. During 1986, climatic factors temporarily reduced budworm populations Forestwide. Budworm activity may increase in the near future in response to drier conditions now prevalent throughout this Region. [illegible]

Dwarf mistletoe infests [illegible] percent of lodgepole pine stands, [illegible]

Root diseases [illegible] more than [illegible] percent of the commercial forest land [illegible] on the Forest. [illegible]

Air Quality

[illegible] Class I [illegible]

[illegible]

CHAPTER IV - ENVIRONMENTAL CONSEQUENCES

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Mitigation was an important consideration in the formulation of standards, prescriptions, and minimum management requirements associated with each of the alternatives. These items are discussed in other parts of this document or in special sections of the appendices and will not be repeated here.

This chapter is presented in a way which attempts to avoid redundant statements. For instance, the specific activities generated to enhance fish habitat are limited to a few acres and the discussion is short. However, the efforts to maintain or improve fish habitat are inherent in several other activities (timber, roads, grazing, etc.) and the effects on fish habitat are included in these activity discussions.

The following changes and additions have been made to this chapter between the Revised Draft EIS and Final EIS.

The grizzly bear discussion has been expanded to include effects of forest management on the grizzly bear to address concerns expressed through individual and agency comments.

The section on the effects of timber management has expanded discussions on silvicultural systems, logging methods, slash control, site preparation, reforestation, and timber stand improvement.

The minerals section has been rewritten to describe environmental effects of mineral development. A clearer differentiation has been made between mineral development and oil and gas leasing.

The cultural resource section has been expanded to include discussion of the effects of forest management. The discussion addresses the future direction of management of the cultural resources program.

A discussion of energy corridors and the effects of energy transmission on forest management has been added. The impacts of energy transmission on the Forest have been included.

A change in road mileage has been made on Table IV-15. The discussion under roads has been expanded to describe projected road management actions. Table IV-22 has been removed, the information has been moved to Table II-24. The discussion on water quality has been changed to consider downstream effects.

A. Wilderness

The amount of wilderness proposed in each alternative is dependent on the goals and objectives for that alternative. The activities in wilderness, primarily trail construction and maintenance, are discussed in Section D of this chapter. Acres of wilderness for each alternative are shown in Table IV-1.

The Lolo Forest contains portions of the Selway-Bitterroot and Scapegoat Wildernesses and all of the Rattlesnake and Welcome Creek Wildernesses. Acres of wilderness at the present time on the Forest are approximately 139,708. Below is a table which displays the combined acres of proposed and established wilderness on the Forest.

Table IV-1: Area Assigned to Wilderness (Established and Proposed)
(thousand acres)

Alternative							Benchmark		
a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
352	352	352	363	140	539	916	342	130	345

Alternative e and Max PVN Benchmark limit wilderness to the existing level of designated wilderness (139,708 acres). Alternative g recommends the inventoried roadless land on the Forest for wilderness. Alternatives a, b, c, d, and RPA and Min Level Benchmarks are all quite similar in terms of total recommended wilderness acres, with minor changes in terms of contiguous wilderness acres on adjoining Forests. Alternative f contains wilderness recommendations for those roadless acres with particular public interest. An addition of approximately 400,000 acres is proposed for wilderness in this alternative.

Wilderness classification can reduce PNV and contribution to the local economy of the Forest because the possibility of timber harvest or other receipts is precluded. On the other hand, those businesses and individuals dependent on recreation may benefit from the classification of wilderness since this increases certain recreation opportunities. The debate of "how much wilderness" tends to polarize the community into groups of wilderness supporters and commodity users.

The demand for wilderness recreation is shown in Table II-44 as expected Type I recreation use. The supply of wilderness recreation is shown in the same table as Type I recreation potential. A comparison of the supply and demand situation indicates that there will be an excess supply of wilderness recreation in all alternatives during the planning period of the first decade as well as throughout the projected planning horizon.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The establishment of wilderness has some effect on long-term productivity. Opportunities to increase productivity through management of timber and wildlife seral habitat resources are foregone on the wilderness acres. The maintenance of primitive recreation opportunities is maximized and maximum protection is given to old-growth timber and its associated wildlife habitat. Threatened or endangered plant and animal species are protected but little can be done to improve their habitat. Natural-appearing landscapes are preserved although buildup of natural fuels increase the risk of wildfire.

Irreversible and Irretrievable Commitment of Resources - Unless Congress revokes wilderness classification, timber products and mineral development can be irretrievably lost.

Adverse Effects Which Cannot be Avoided - Control of insects, diseases, and noxious weeds is generally restricted or extremely costly because of the techniques required. Methods to suppress wildfires are restricted to those which cause little or no ground disturbance; this may increase costs.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Only 2 miles of the proposed wilderness areas are near land in other public ownership so no conflicts with other land management plans are anticipated.

Energy Requirements - Energy requirements for using and managing the recreation resource in wilderness is shown in Table IV-6.

B. Roadless

The amount of roadless area in each alternative is dependent on the goals and objectives for that alternative. The activities in roadless, primarily trail construction and maintenance, are discussed in Section D of this chapter. Roadless descriptions for each alternative are shown in Table IV-2.

Table IV-2: Area Assigned to Roadless Management
(thousand acres)

Alternative							Benchmark		
a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
165	379	145	181	300	77	21	228	95	375

Alternative b which stresses maintaining a natural environment has the highest level of designated roadless areas. Alternative e assigns many areas for roadless management that other alternatives recommended for wilderness. The Min Level Benchmark has a large acreage of roadless by default since minimal active management is proposed in this benchmark. Alternatives a, c, d, and the RPA Benchmark have similar levels of roadless management, partly as a result of similar levels of wilderness. The Max PNV Benchmark chose a low roadless acreage because there is no monetary value associated with roadless areas once the demand level has been satisfied. Alternative f and g have low levels of roadless acreage because so much of their roadless areas were proposed for wilderness.

Roadless assignment can reduce PNV and the Forest's contribution to the local economy because regulated timber harvest is precluded. Mineral development is reduced because of the increased difficulty of prospecting and exploration. Avoidance is recommended for any utility corridor planning passing through roadless areas. On the other hand, those businesses dependent on back-country recreation will benefit since this increases the recreation opportunities.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The assignment of acreage to a roadless situation has some effect on long-term productivity. The natural productivity of resources is maintained but the opportunity to make the area more productive through intensive management is foregone. Roadlessness maintains the opportunity for semi-primitive recreation and is important in the maintenance of old-growth timber and its associated wildlife species. Providing adequate acreages of roadless will not by itself meet old growth vegetative conditions. In addition, old growth must be distributed adequately in order to allow for species mobility and the maintenance of gene pools. This is illustrated in Table II-19 on page II-57. Natural-appearing landscapes are preserved although the opportunity for more intense wildfires is increased by the buildup of fuels.

Irreversible and Irretrievable Commitment of Resources - Assignment of lands to roadless management is not irreversible, but change would need to be subjected to an intensive analysis, including public involvement. Such analyses may occur each time the Forest Plan is subject to revision (at least every 15 years). Roadless assignment results in an irretrievable loss of renewable resources (especially timber) that are produced but not harvested. The area remains available for wilderness consideration under the Roadless emphasis.

Adverse Effects Which Cannot be Avoided - Roadless assignment means that timber harvest will not occur for timber management purposes. It also limits the opportunity for mineral prospecting and exploration because of the difficult access. Many types of wildlife and fish habitat improvements may be impractical or expensive to accomplish. Control of insects, disease, wildfire, and noxious weeds will require special and sometimes inefficient techniques.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Major conflicts associated with roadless assignment involve timber management, mineral exploration and development, and utility corridors. Since the assignment primarily results from the desires of the publics, there are few, if any, conflicts with local or regional planning efforts outside the Forest.

Energy Requirements - Some energy may be used to maintain recreation facilities (primarily trails) but this use is associated with recreation. Energy expended by the public in dispersed recreation is shown in Table IV-6.

C. Developed Recreation

There are 62 public and private developed recreation sites located on the Forest. These sites occupy 727 acres and have little or no effect on management of other resources. Of the 1,200,000 recreation visitor days on the Forest, 237,000 of those occur in developed recreation sites. The Forest has a capacity for 6,541 visitors at any one time in developed sites. Environmental consequences of retaining these sites may be severe on the specific location. Due to the use of pavement and gravels, vegetation is destroyed or significantly changed and water infiltration is slowed while overland flow is increased. However, the pavement and gravel are necessary to prevent even more severe vegetation, soil and water effects due to excessive trampling. Few sites are overused on the Forest, many are underused (those not having use of at least 20 percent of capacity). No site has exceeded its theoretical capacity on an annual basis.

Based on input gained during public scoping and review, the high expense of recreation facility maintenance, and the Forest capacity for developed recreation visitor days per year exceeds anticipated use for at least 5 decades, emphasis was placed on the dispersed recreation spectrum in this planning effort. Table IV-3 displays the anticipated use at Forest Service developed recreation sites; the capacity of these sites 405,000, which exceeds demand for 50 years.

Table IV-3: Anticipated Use at Developed Sites
(thousand recreation visitor days)

	Decade					
	1980	1990	2000	2010	2020	2030
Anticipated Use	295	353	393	375	386	405

Developed recreation sites are high cost per acre facilities due to construction, maintenance, cleanup, monitoring, and policing. Some income is generated; however, this income has little effect on the PNV of the Forest and even fails to offset the cost of Forest-owned developed recreation activities.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The construction and management of these developed sites will have an adverse effect on the long-term productivity. The vegetation on some of the sites will be replaced by graveled or paved roads and camp spots. The vegetation on much of the remainder will be suppressed by the concentrated trampling of the users. These effects would remain evident for a long period of time even though the sites were abandoned. Efforts to restore the sites to previous productivity would be costly and of questionable success.

Irreversible and Irretrievable Commitment of Resources - Once established, these sites are likely to be maintained and become an irreversible, long-time commitment of a resource. Wood fiber and forage which would have been produced on the sites is irretrievably lost.

Adverse Effects Which Cannot be Avoided - Some of the vegetation on these sites will be lost or suppressed. Dust and noise from the concentration of campers will exist. The opportunity for vandalism will be present due to the numerous and costly facilities concentrated in one place. Big-game habitat in the area will be destroyed or vacated.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Generally, construction and management of these sites does not compete with privately owned campsites.

Energy Requirements - Energy will be used in the cleanup and maintenance of these sites. Most campgrounds will require garbage removal on a regular basis and yearly maintenance of the facilities will be energy intensive. Energy used by recreationists to reach and use developed recreation sites will be 84 billion BTU's annually during the first 10 years and is projected to increase proportionally with recreation visitor days during the following decades.

D. Dispersed Recreation

Dispersed recreation occurs on land and water which is not developed for intensive or concentrated recreation. Specific Forest Service activities include maintenance and/or construction of facilities such as trails, trailheads, toilets, hitch racks, stock ramps, parking areas, and information signs to enhance the recreation experience of the Forest visitor and to protect other resources. The effects of these activities on soils, water, and vegetation are similar to the effects for developed recreation sites, but to a lesser degree, and costs per acre for maintaining these sites is not as high. The acreage available for each category of recreation is shown in Table IV-4.

Dispersed recreation on the Lolo includes the opportunity to use 1,823 miles of system trails, 182 miles of which serve wilderness areas. Other activities include hunting (approximately 211,000 hunter days a year use), berry picking, firewood gathering, backpacking, camping, mountain climbing, hiking, fishing, boating, and other water sports. The opportunities range from areas with easy access which require little in the way of self sufficiency to areas which are remote and require a high level of survival experience.

The quality of dispersed recreation varies by alternative due to the impacts of activities on the land. The alternatives with greater amounts of development lose some opportunity for primitive or backcountry experience, as more of the land is roaded and more timber harvest occurs. The alternatives with fewer planned developments (roads, etc.) provide more in the way of backcountry recreation experiences. The following table displays

the acres of the Lolo assigned to roadless management, wilderness management, and roaded management.

Table IV-4: Area Assigned to Roadless, Wilderness, and Roaded Management (thousand acres)

	Alternative							Benchmark		
	a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
Roadless	192	380	162	199	310	95	21	228	95	375
Wilderness	325	351	335	345	130	521	906	342	130	345
Roaded Mgt.	1557	1325	1564	1517	1747	1466	1139	1491	1621	1341

Differences between alternatives in roadless and wilderness acres was discussed earlier. Areas not designated for roadless or wilderness management are potentially available for roaded forms of management. Alternatives c, e, and Max PNV Benchmark have relatively low quantities of roadless and wilderness and a corresponding high level of roaded management. At the other extreme are Alternatives b, f, and g which emphasize wilderness and/or noncommodity resources, and as a result their roaded management areas are relatively small. At the middle of the range are Alternatives a, d, and the RPA Benchmark with approximately the same amount of land in roaded management. The maintenance of the existing trail system will be influenced by the road development and timber harvests projected in each alternative. Portions of trails that are bisected with roads may lose their effectiveness and be replaced with the access then provided by the roadbed. The specific need to retain, relocate, or abandon trail segments cut by roads or affected by timber cutting units will be addressed in project analyses.

Roadless areas provide opportunities for people to have semiprimitive recreation experiences, including the use of motorized equipment such as snowmobiles, motorcycles, or chainsaws. Wilderness management precludes the use of such mechanized equipment and provides solitude in the recreation experience. Roaded areas provide the broadest spectrum of recreational use and, if roads are closed, can approximate roadless conditions with the exception of the physical existence of roads. The projected use for all dispersed recreation is shown in Table IV-5.

Table IV-5: Projected Use for Dispersed Recreation (thousand recreation visitor days)

		All Alternatives
Plan Period	1982 - 1985	1,169
	1986 - 1990	1,204
Projections	1991 - 2000	1,283
	2001 - 2010	1,392
	2011 - 2020	1,478
	2021 - 2030	1,536

As projected use approaches capacity, recreation can either be limited to acceptable levels by a permit system or the quality of the recreation experience will be degraded. Excessive use in either the semiprimitive or wilderness setting can cause erosion, soil compaction, and loss of vegetation along main trails and at the more desirable campsites. These are minor effects from the total Forest standpoint but are important esthetic effects to those people using the trails.

Direct revenue from dispersed recreation is insignificant, but because values have been assigned to recreation visitor days, dispersed recreation has a high value and a positive affect on the present net value of the Forest.

The effect of emphasis on recreation on the lifestyles in the area is identical to those discussed under Wilderness and Roadless.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The short-term use (construction and maintenance) of trailhead facilities, toilets, hitch racks, stock ramps, and loading areas will have similar long-term effects on productivity as developed recreation sites. Although trails can be abandoned and may eventually return to near original condition, this is not likely to happen as long as the demand for dispersed recreation remains high.

Irreversible and Irretrievable Commitment of Resources - Once facilities and trails are constructed, they are likely to be maintained into the foreseeable future. The vegetation displaced by these facilities constitute an irretrievable loss of resources.

Adverse Effects Which Cannot be Avoided - The loss of vegetation displaced by the construction and maintenance of the facilities and trails cannot be avoided.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - No conflicts with other land management plans are likely to occur as a result of dispersed recreation activities. There may be visual impacts from roads and timber sales but they will not exceed the Visual Quality Objectives for the areas.

Energy Requirements - Energy is required for the maintenance of dispersed recreation facilities but at less volume than for maintenance of developed recreation facilities. The major use of energy associated with dispersed recreation is that used by the public in travel to and use of the Forest (Table IV-6).

Table IV-6: Energy Used Annually in Dispersed Recreation During the First Decade (Billion B.T.U.'s)

Alternative							Benchmark		
a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LEV
470	470	470	470	470	470	470	470	470	130

Projected energy use in succeeding decades is proportional to the recreation visitor days projected for those decades (Table IV-5).

E. Wildlife Habitat

There are scheduled activities specific to the improvement of wildlife habitat on the Forest. Additional wildlife habitat improvement is associated with management of other resources, primarily timber harvest and road building. The area scheduled for burning to improve wildlife habitat is shown in Table IV-7.

Table IV-7: Wildlife Habitat Improvement (thousand acre-equivalents per year)

		Alternative							Benchmark		
		a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
Plan Period	1982-1990	7.5	6.0	8.0	8.0	8.0	8.0	7.7	8.5	0	0
	1991-2000	8.0	6.0	0	8.0	8.0	8.0	7.7	6.5	0	0
Projections	2001-2010	8.0	6.0	0	8.0	8.0	8.0	7.7	6.3	0	0
	2011-2020	8.0	6.0	0	8.0	8.0	8.0	7.7	6.3	0	0
	2021-2030	8.0	6.0	0	8.0	8.0	8.0	7.7	6.3	0	0

There is little variation between alternatives in the amount of habitat improvement scheduled. The reason for this is that publics supporting different alternative philosophies generally all favored high big-game populations (which translates into habitat improvement). Two exceptions are Max PNV (elk habitat management is not the most cost effective activity) and Min Level (which precludes wildlife habitat management).

One objective of wildlife habitat improvement is to maintain the productivity of winter range forage areas. This is accomplished primariliy by spring burning. Most burns will be "cool" and vegetation will resprout rapidly. The soil surface will be exposed for a short time and with a slight risk of accelerated erosion, but the chance for a high-intensity rainstorm in the early spring is small. Air quality degradation is similar to that from slash burning following timber harvest.

Another major objective is to improve summer habitat effectiveness (freedom from disturbance), which is provided primarily by restricting vehicle access where roads exist. A high percentage of roads will be closed to vehicle use to provide big-game security. Decisions on which roads will be closed will be based (in part--see Section 0.2 Road Management for other factors) on productivity of the land to produce elk, the amount of cover available for protective screening, and the need to meet other Forest outputs such as dispersed recreation or firewood. Elk productivity has been classified into high, moderate, and low summer range productivity. Areas of the Forest were rated based on the abundance of surface water, elevation, steepness, and other topographic factors. Roads will be managed in the following manner to improve habitat effectiveness:

High elk productivity	All new roads closed.	Existing roads will have no more than 1.1 miles of open road per square mile.
Moderate productivity	All new roads closed.	Existing closures will remain in effect.
Low productivity	All new roads open.*	All roads open unless closed for other reason or winter range affected.

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* Areas of low summer range productivity often provide excellent winter range. It is assumed that winter range will be closed to vehicle use during the winter only.

Thus, existing access will remain somewhat the same. Arterial road systems (which are essentially in existence) will remain open. Major drainages that have been previously unroaded will be closed to vehicle access unless the elk summer range values have been demonstrated to be low. Short-term closure exceptions may be made for removal of firewood at intermittent periods.

Management recommendations developed from findings of the Montana Cooperative Elk-Logging Study will be incorporated into project activities occurring within elk habitat to facilitate maintaining elk populations.

A wide variety of nongame wildlife occurs on the Forest and they are dependent upon a wide variety of habitats. Some activities that directly benefit nongame habitat are planned and include retention of specified amounts of slash scattered on the ground, the retention of snags where safety permits, and the assignment of old-age timber stands to old-growth dependent wildlife species.

The Montana Department of Fish, Wildlife and Parks is responsible for management of State-owned wildlife. They have no direct habitat management responsibilities on National Forest System lands, but because wildlife populations are directly related to the quality and extent of their habitat, Lolo Forest managers coordinate their activities with the Department. This coordination has in itself no direct effect on the environment, but results in recommendations concerning several activities, especially timber harvest and road management.

The specific activities associated with wildlife habitat improvement contribute to the economic base and lifestyle of the area by maintaining opportunities for business-related activities (outfitter-guides) and opportunities for viewing and hunting wildlife.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The vegetative communities of areas that are burned or planted will be changed. If trees have invaded these sites, some or all may be killed. This is especially true of tree seedlings which may occupy the area. The productivity of the sites will not be degraded.

Irreversible and Irretrievable Commitment of Resources - The assignment of land to wildlife habitat maintenance or improvement does not constitute an irreversible commitment. Any vegetation removed or suppressed by any of the habitat improvement activities constitute an irretrievable loss of that resource.

Adverse Effects Which Cannot be Avoided - The soil surface will be exposed by burning for a few days or weeks and there is a slight risk of accelerated erosion. Air quality degradation is similar to that from slash burning but smoke generation will be less.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - There are no known conflicts of wildlife habitat management with other land management plans, policies, and controls.

Energy Requirements - Energy will be used to burn and plant. Because of the acreage involved this energy use will amount to a small percentage of the total energy used on the Forest.

Threatened and Endangered Species

The Forest contains habitat for four threatened and endangered species, including the peregrine falcon, bald eagle, gray wolf, and grizzly bear. For the peregrine falcon, eagle, and wolf, habitat enhancement is not a significant factor in bringing about population recovery. The reason is that nonhabitat-related factors have led to their decline which must be resolved before recovery can be accomplished. For the falcon the factors include use of pesticides (specifically DDT), indiscriminate shooting, and excessive take by illegal falconers. Factors for the eagle include the use of pesticides (DDT), lead shot ingested through the consumption of waterfowl, and indiscriminate shooting. For the wolf, factors are the use of pesticides (specifically 1080 and sodium cyanide used for coyote control) and indiscriminate shooting. Recovery opportunities for these species on the Lolo involve protection instead of habitat enhancement, such as scheduling of activities to avoid critical nesting periods, road management to minimize mortality risks, and protection of nesting sites.

For the grizzly bear the situation is different. Two strategies are essential in achieving grizzly bear recovery. In order of importance they are the minimization of human-caused mortality, and habitat maintenance and enhancement.

The grizzly bear management philosophy differs for each of the Management Situations found on the Forest (Management Situations are identified in the Interagency Grizzly Bear Guidelines, Federal Register, Vol. 50, No. 102, Tuesday, May 28, 1985, p. 21696), and incorporated in the Grizzly Bear Recovery Plan. In Management Situation 2, where the bear is an occasional visitor and the area is not needed for recovery, the goal is to minimize man-caused mortality. Habitat quality in such situations is not a factor in recovery. In Management Situation 1, however, habitat maintenance and enhancement, as well as the minimization of man-caused mortality, are driving management goals. Valuable grizzly habitat occurs in relatively stable communities such as wet meadows and avalanche chutes. Maintenance of such communities means protection from disturbance by stock grazing or roading.

Valuable grizzly habitat also occurs in transitional communities such as low elevation brushfields created by past wildfire. In such situations, failure to manage these habitats will result in their eventual loss. Maintenance of such habitat often requires the use of prescribed fire.

In some cases timber harvest can be used to enhance the availability of bear foods. For instance a research project done by D.A. Tirmenstein in 1982 indicated that approximately 25% of all available grizzly bear foods occured in logged over areas. Opportunities for this are found in mid-elevation timber stands where natural bear foods have been replaced through plant succession. Generally, the criteria that determine whether or not a logged-over area may be beneficial include the ability of a site to produce berry-producing shrubs, a lack of natural bear foods in the area, and the ability to perform the logging without increasing the risks of man-caused mortality. Man-caused mortality associated with habitat management activities can often be avoided by scheduling activities for the period the bear is not apt to be present and by imposing road closures at all other times. Decisions to enhance habitats within Management Situation 1 areas will consider these options. None of the alternatives adversely affect any of the threatened or endangered species. The variation by alternative with reference to grizzly bears is displayed in Table II-22.

The U.S. Fish and Wildlife Service, Endangered Species Field Office, rendered the following opinion dated April 25, 1985. "Based upon your response to our 1982 biological opinion, the current Lolo DEIS/Plan, and the Forest Service's commitment to recovery of threatened and endangered species; . . . reinitiation of formal consultation on the Lolo DEIS/Plan is not necessary.

"Formal consultation was completed on May 10, 1982, when the Fish and Wildlife Service issued a biological opinion that concluded that the Lolo Plan is not likely to jeopardize the continued existence of the threatened grizzly bear. The Revised Plan incorporates revisions to reflect recommendations in the biological opinion."

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Regulating human access in and through occupied grizzly bear habitat is paramount in grizzly bear management. Important habitat management tools include prescribed burning to enhance food-producing areas and timber harvest to improve cover/feeding area distribution.

At the present time, the Forest has available habitat to support expansion in population of peregrine falcon, bald eagle, and the gray wolf. However, opportunities to improve habitat for gray wolf involve tradeoffs in recreation opportunities, due to access restrictions needed to mitigate social pressures on the wolf.

Conflicts with Other Land Management Plans, Policies, and Goals - The proposed plan is consistent with approval recovery plans (grizzly bear) and responsive to guidelines and plans generally accepted to represent state-of-the-art management (peregrine falcon, bald eagle, wolf).

F. Aquatic Environment/Fisheries Habitat Improvement/Water Uses

Habitat improvement emphasis is oriented toward restoration of deteriorated habitat resulting from past land use and errant practices. The upper limit of habitat improvement is the feasible restoration of all damaged habitats. This level is expressed in Alternatives d, e, f, and g (see Table II-23). The objective is restoring fisheries production to pre-disturbance levels in these habitats. Projects include such activities as improvements to restore livestock damaged streambanks, modification of intake culverts to restore fish passage, and creating pools where road construction, logging, or other actions have destroyed pools. In addition a limited amount of enhancement projects may be justified where there is high recreation demand for improved fishing opportunities.

The Forest chose not to use the R-1/R-4 sediment model and the fish response model because not enough site-specific baseline data has been collected. The fisheries habitat and water quality coefficients used are detailed in the planning records which are available upon request. Although Forest-wide averages do not reflect specific on-site conditions, monitoring will emphasize: 1) the collection of local sediment and stream flow data, and 2) streams with important fish habitat and/or potential problems.

Validation of the R-1/R-4 Sediment Yield model has been given high priority. The model is derived from Idaho data and needs to be calibrated to Forest conditions. Before using the model for project evaluation, numerical factors will be developed that are specific to the Lolo. Many drainages were developed before 1975 and before there was a formalized monitoring program. The Forest has initiated monitoring on several undeveloped drainages for the purpose of providing natural background (baseline) information. Once development commences, the same monitoring procedures are continued to determine what changes occur in water quality, the aquatic environment, or fisheries habitat. The monitoring results can be extrapolated to streams with similar hydrologic and biologic characteristics. Developed streams can then be evaluated for changes that may have occurred prior to development and monitoring.

Data currently available suggests that we have healthy fish populations in developed drainages. A few drainages such as Schwartz Creek and Lolo Creek have measured increases in sediment. When projects occur in drainages where sediment problems exist, constraints have been designed to prevent any net increase in sediment. These project areas also receive priority in project monitoring. Project monitoring design is structured to provide additional feedback for increasing predictive capability on a localized level.

The quality of water generated by Alternatives a, b, d, and f should have no significant effect on the use of water for irrigation, stock water, domestic water supplies, wildlife, fisheries, or recreation purposes. Neither the number of consumptive uses nor the amount of nonconsumptive uses should change under Alternatives a, b, and f. The number of consumptive water uses may be increased under Alternative d because of increased grazing, implying more stock water developments. Under Alternatives c and e, no change is expected in the number of consumptive uses nor the amount of nonconsumptive uses. The quality of water generated by these alternatives could have somewhat negative effects on irrigation ditches and diversion structures. Secondary negative effects include a decrease in fish populations and the appearance of turbid water that some Forest users would find offensive under Alternative c. Alternative g would have the least effect on water quality and uses on a Forest-wide basis, but quality would suffer in those drainages intensively managed for timber production.

Just as one resource activity affects another resource activity, so do on-Forest activities have effects off-Forest. However, it is difficult to determine the off-Forest effects because private and other agency activities also contribute to these effects. The Division of Forestry, Department of State Lands; the Water Quality Bureau, Department of Health and Environmental Sciences, and the Department of Fish, Wildlife, and Parks are the State agencies responsible for data collection and evaluation of waters downstream from the Lolo National Forest. Off-Forest analysis is dependent on a strong data base related to private land activities and off-Forest stream conditions. Where downstream data is available, the impact of management activities on the off-Forest aquatic environment will be evaluated at the project level, as required by Forest-wide Standard No. 28. The Forest will continue to encourage data collection off-Forest and work with the other agencies and adjacent landowners to maintain water quality.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Most fish habitat improvement will require some localized instream work with manual labor and/or equipment. This disturbance is limited to the project site and adverse effects on water quality are usually restricted to a short distance downstream and usually lasts for just a few hours following the disturbance. Except for the resulting project structure, the work is usually inperceptible following one high water period. When fish passage and migration are improved, the long-term productivity for the fish is improved over present levels.

Irreversible and Irretrievable Commitment of Resources - The irretrievable and irreversible commitment of resources are insignificant due to the limited scope of projects.

Adverse Effects Which Cannot be Avoided - Stream bottoms will be disturbed if fish barriers are removed and if fish hatching channels are constructed. This may have minor short-term effects on the fish and insects which occupy these areas. Stream sediment will be moved and/or added to the water when disturbance of the banks or bottom is necessary.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Projects are designed to enhance or restore fisheries productivity, and this is consistent with Montana Department of Fish, Wildlife, and Parks' policies. Each project proposal is reviewed for this consistency with that Department. Other agencies are notified of major projects through the Corps of Engineers 404 permit process that provides an opportunity for agencies to identify conflicts with their plans and policies.

Energy Requirements - Energy will be required to complete the projects and to monitor watershed conditions on the Forest, but this will be a small portion of the total Forest use.

G. Minerals

Mineral potential on the west end of the Forest is generally high for locatable minerals. Going to the east, the potential becomes less with the Seeley Lake Ranger District having a low probability for the occurrence of hard rock mineralization. In western Mineral and Sanders Counties, several major mining companies are actively exploring for a southern extension of the stratabound silver-copper deposits currently under development in the Cabinet Mountains to the north. Exploration has consisted of detailed geologic mapping, stream sediment sampling, and the drilling of several core holes. All of this activity has disturbed less than 10 acres for drilling and resulted in about 2 miles of new road. East of Thompson Falls is a copper/molybdenum deposit. This buried porphyry was nearing development when the world prices for these commodities dropped significantly in 1982. If the metal prices rise sufficiently, this deposit may be put into production. Small, discontinuous veins of barite have been mined to supply a regional demand to the oil and gas industry. Surface disturbance for roads and pit areas average 2 to 3 acres for each site. There are five developed pits.

Most of the locatable (hard rock) mineral activity on the Lolo involves the exploration and production of placer gold. These are usually one- and two-man operations involving a back hoe or front-end loader mining alluvial gravel. This gravel is then run through a trommel or wash plant where water and gravity are used to separate the more dense gold from the lighter country rock. There are about 60 of these mines active on the Forest during any field season (May through October). The amount of ground mined by the average operation is less than 2 acres. Virtually all of the streams with active prospecting or development have seen prior mining dating back to the late 1800's. All ongoing operations are monitored for compliance with the various environmental standards; several have been shut down for not meeting the Federal and State water quality discharge requirements.

Based on existing information, the potential for oil and gas production on the Lolo appears to be low. The best potential apparently lies along the northern and eastern margins of the Forest. Only four permits have been issued for geophysical exploration in the last 5 years; none have been issued in the past 2 years. As a consequence, there is little probability that any requests for drilling permits will be received in the next 5 years. On the other hand, there is active lease speculation occurring. The number of acres under lease is currently dropping; in August 1980 there were 1.45 MM acres under lease or application, and in September 1985 there were 920 M acres in the same status. Leases are often held in speculation, and if the market is not favorable they are relinquished when the term expires and may be picked up again by another applicant. What results is a constant process of leasing and releasing.

New leases and subsequent lease issuance will undergo additional analysis as required by NEPA, tiering to this EIS through incorporation by reference the information presented in the programmatic Environmental Analysis. Special stipulations are used whenever the leased area has surface resource values needing special protection to meet the alternative management objectives. Site specific stipulations to protect surface resource values are found in Appendix F.

Mineral material sites are established primarily for support of the timber sale program. Aggregate is mined and used for road surfacing and fill. Some pits are available for permit issuance to the counties and State (free use) and private individuals (charge).

All mineral-related activities are permitted or approved following an environmental analysis. The majority of the environmental impacts which must be mitigated are associated with placer mining. Although most of the impacted streams have been mined several times in the last 100 years, current activity results in the clearing of stretches of riparian vegetation, running the gravels through a wash plant, and contributing some sediment downstream. Fish and riparian insect habitat is completely disrupted in the mined portion with occasional downstream effects of sedimentation from leaking or overflowing settling ponds. Stream diversion also adds sediment to the system. Most claimants are able to mine several hundred feet of stream per year. Their operations are approved when they comply with the Forest Service's surface management regulations (36 CFR 228) which require measures to insure compliance with Federal and State environmental laws, reclamation of the disturbed areas, and, generally, the posting of a reclamation bond.

Welcome Creek is the only designated wilderness area containing mining claims staked prior to the date of wilderness land withdrawal (January 1, 1984). All or parts of seven mining claims are in this area. Should any development be proposed in the Wilderness, the Forest mining engineer would make an examination to determine the validity of existing rights. If validity does exist, then development of the claim may proceed subject to conditions to mitigate impacts to the wilderness resource. Although unlikely in this instance, development may include roading, drilling, placer mining, digging adits/shafts, and constructing utility lines. If a claim were to proceed to patent, only the minerals, not the surface, would become private property. Environmental impacts of roading, placer mining, etc., were discussed earlier. The major result of mining on the wilderness/roadless areas would be to lower the quality of these resources.

Development of mining claims in roadless areas may include the construction of roads, drill sites, structures to house equipment, and, possibly, power/utility lines. There is no requirement for determination of valid existing rights because these lands are not withdrawn from mineral entry. However, operating plans are approved for mining activities which constitute the next logical step in development, and contain the requirement for a reclamation bond. The effects of hard rock mineral exploration or development on the wilderness/roadless resource will not vary by alternative, but the larger the area designated for wilderness/roadless management, the greater the possibility of encompassing recorded mining claims subject to exploration and development.

Impacts from oil and gas exploration have been negligible. Of the four geophysical exploration permits issued, three were for the vibroseis technique where several large trucks lower vibrator plates to initiate a seismic signal. These vehicles are restricted to existing roads and trails. Local traffic along the road is slowed but not obstructed. The other type of seismic exploration permitted was a surface charge line supported by helicopters. There is noise associated with the helicopter and the surface detonations. Each explosion will lay down the grass and strip shrub and trees of leaves/needles for a few feet in radius from the blast.

There are no, nor will there be any, oil and gas leases issued within existing wilderness areas. However, many leases have been granted on a number of roadless areas. If any of these roadless lands under lease subsequently become designated wilderness, exploration/development conflicts may arise. The type of geophysical exploration which likely would be used is the helicopter supported surface-charge technique. Roading would only occur if the seismic information pinpoints a probable petroleum structure and a well needed to be drilled. Impacts associated with seismic exploration, roading, and drill sites have previously been described. The same exploration/development scenario will hold for lands under roadless management. Again, the effects of oil and gas activities do not vary by alternative. However, the alternatives assigning more lands to wilderness/roadless contain the greater chance that lease exploration may occur within them.

Each mineral material site is developed with a plan to recontour and revegetate the area. Most of the environmental impacts are self-contained, but noise and dust may affect the surrounding area for several hundred yards. Trucks driving to and from the pit add additional traffic to the road system. Local trash also tends to migrate into these sites.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Any exploration and development of the mineral resource is likely to have an effect on the vegetative productivity of the specific disturbed site. In the short term, disturbed sites are unlikely to be as productive as they were before the activity occurred. In the long term, however, disturbed sites may return to near normal productivity. Claim staking and mineral leasing, in and of themselves, will not affect productivity.

Irreversible and Irretrievable Commitment of Resources - Claim location and mineral leasing are not an irreversible commitment of a resource since they are not automatically subject to exploration and/or development. Once development does occur, some effects are irreversible/irretrievable. Even though sites may be rehabilitated, the vegetation lost while the activity is taking place is irretrievable. So, too, is the mineral which is extracted.

Adverse Effects Which Cannot be Avoided - There are no adverse surface effects associated with claim staking or mineral lease issuance. Where there is exploration or development, there are unavoidable surface impacts from increased use of existing roads, construction of new access routes, and use of the surface directly related to the mining activity. Soil, water, fisheries, wildlife, and visual resources may be adversely impacted. Efforts are made to insure that the long-term effects are minimized; however, total reclamation is often difficult to achieve. Vegetation is impacted for the short term and reclamation efforts include reestablishing that resource. Where mining activity has caused the removal of merchantable timber, those trees are either used in the mining operation or sold.

Conflicts with Objectives of Other Land Management Plans, Policies, and Controls - Locatable mineral development may take precedence over other activities because of the applicable laws and regulations. Because of this, conflicts are possible with other land and resource management plans. These conflicts can be mitigated to some extent by taking into account the other resource values and impacts in formulating the operating and reclamation plans.

Energy Requirements - Energy requirements will be slight unless mineral/oil and gas discoveries are made. Some energy will be used in monitoring the few claims which now exist but this will be a small portion of the total Forest requirements.

H. Human and Community Development

A variety of programs provides employment for individuals in Forest activities. Full-time Forest Service employees live and work in and near the Forest. In summer, this number is supplemented by seasonal employees, usually from local communities.

These programs have significant economic effect on the communities in and near the Forest but, of themselves, have little effect on the physical and biological environment. In some local communities, the job force of the Forest forms a significant portion of the economic base (Table IV-8).

Table IV-8: Forest Service Employment
(person years)

	Alternative							Benchmark		
	a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
Permanent	320	320	340	320	320	320	280	340	492	55
Seasonal	135	139	158	143	143	141	117	159	252	90

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The goal of personnel on the Forest is to maintain the long-term productivity of the Forest. This desire is also what entices people, young and old, to volunteer for particular jobs on the Forest.

Irreversible and Irretrievable Commitment of Resources - None identified.

Adverse Effects Which Cannot be Avoided - None identified.

Conflicts with the Objectives of Other Land Management Plans, Policies and Controls - None identified.

Energy Requirements - None identified.

I. Lands

1. Special Uses

In 1983 the Forest administered 571 special-use permits. Ninety of these special-use permits are for dams, ditches, and other water-related facilities, and 285 are for roads. There are 44 recreational occupancy permits, 126 permits for utilities and communications, and 26 miscellaneous permits. The construction of these facilities has caused significant change to the site where they are located. Dams and ditches result in soil movement and displacement. Water transmission systems remove water from the stream channel and, if this results in too low a stream flow, fish populations can be eliminated. The vegetation along the sides of the dams and ditches is altered, but the new growth provides soil stabilization. Special-use roads have the same effect as other roads and are discussed in Section O, page 49.

Though the effects of the special uses may be significant for the specific site, these uses are limited to a small acreage of the Forest. Each request for a new permit is subjected to environmental analysis prior to consideration for approval.

Special uses do contribute to PNV because fees are collected from permittees. These fees do not offset the administrative costs of the program. The dams and ditches contribute to the economic base of the area. The economic feasibility of the water-related use would change drastically in absence of low-cost water storage and distribution systems. Other uses provide for necessities, convenience, or comfort (transmission and telephone lines); access to isolated ownerships; communication networks for law enforcement, health and safety and commercial needs, and employment on ski and summer resorts. Recreation residences and organization camps provide a different recreation experience than campgrounds.

The Forest expects to process approximately 20 applications per year. The kinds of use are unknown, and there is no expected difference between alternatives as to number, kind, or manner by which the requests will be processed.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The vegetation on specific sites occupied by special uses may be changed. Existing and potential tree growth may be replaced by buildings, grasses, and shrubs for soil stabilization or landscaping, clearings for ski runs, or other facilities necessary to utilize the site for the intended use. These effects will remain as long as the facilities remain on the ground.

Irreversible and Irretrievable Commitment of Resource - The dams, ditches, roads, and other special uses will likely be maintained into the foreseeable future. The vegetation lost or replaced by their existence constitutes an irretreivable loss of resource.

Adverse Effects Which Cannot be Avoided - Construction of dams, ditches and roads will cause soil disturbance and short-term accelerated erosion. The fish population change created by withdrawal of water from streams will continue even though requirements to maintain some water flow in streams are met. Special-use facilities may not blend well into the natural landscape.

Energy Requirements - Some energy will be used by the Forest in monitoring special uses but this will be a minor portion of total Forest use. New dams, ditches or roads will require considerable energy use by the permittee.

2. Rights-of-Way and Cost Share

Road and trail rights-of-way are acquired by the Forest from private and other owners, generally in connection with the Forest's timber program. Rights-of-way on which roads are constructed affect about 351 acres of other ownerships each year. This program will decrease over time as needed access is acquired.

Cost-share agreements are negotiated between the Forest and major non-Federal landowners and are usually connected with timber harvest on both ownerships. Agreements cover the administration of roads and both parties share in the construction and maintenance costs.

Although the resource programs vary, the number and location of rights-of-way required will not change significantly under any of the alternatives.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Rights-of-way give the Forest an opportunity to manage lands which might otherwise be unaccessible. Productivity can be maintained or improved. Cost-share agreements allow the Forest Service and private landowners to access lands for timber harvest or other resources and reduces costs of roading to both parties.

Irreversible and Irretrievable Commitment of Resources - Rights-of-way and cost-share agreements can be cancelled, although this is unlikely to happen in the foreseeable future. The resulting roads imply an irreversible use and the vegetation removed by the construction and maintenance constitute an irretrievable loss of a resource.

Adverse Effects Which Cannot be Avoided - Adverse effects of roads are discussed in Section O, page 49.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Access to and within the Forest might conflict with private company plans on intermingled ownership.

Energy Requirements - Energy used in obtaining access and negotiating cost-share agreements involves travel and surveying appropriate routes. This is minor compared to total energy use on the Forest.

3. Property Boundary Location

About 40 to 42 miles of property boundary are located each year and this amount varies between alternatives according to the amount and location of timber harvest. The activity involves a considerable amount of time but has few environmental effects. Some vegetation may be trimmed or completely removed to establish line-of-sight for the survey instrument but this is inconsequential.

Boundary location establishes, with some finality, the property lines of Forest and other ownership. It enables owners to avoid activities on lands they do not own. Location of boundaries has no appreciable effect on PNV nor does it effect the economy of the area. There are approximately 3,000 miles of Forest property line.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Location of boundary has no effect on productivity.

Irreversible and Irretrievable Commitment of Resources - There is no commitment of natural resources associated strictly with boundary location.

Adverse Effects Which Cannot be Avoided - Some vegetation may be removed or pruned but the effect is short lived.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Some energy is expended in travel when surveying but this is small compared to total Forest use.

4. Landownership and Adjustment

About 20 percent of the land within the Forest boundary is privately owned, some of which will be subject to consideration for exchange. Exchange proposals for the future are unknown, and there are no identified differences in the volume of business or how they will be handled among alternatives. However, the resource emphasis of each alternative has an effect on the desirability of acquisition or disposal of specific tracts. Historically, about 5 proposals and 15 inquiries are received each year and all proposals are acted on each year. Each proposal will be subjected to an environmental analysis to help guide subsequent action.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Lands which enter private ownership following exchange will be managed as the new owner desires. Lands obtained by the Forest Service through exchange will be managed to maintain or enhance productivity and to meet the goals of the Forest Plan.

Irreversible and Irretrievable Commitment of Resources - Lands entering private ownership through exchange are committed to whatever the new owner desires. Lands obtained by the Forest Service will be committed to particular uses according to the land management plan in effect at the time.

Adverse Effects Which Cannot be Avoided - None identified.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Consideration needs to be made for other plans in analysis of land exchanges and to the effects on county tax bases, especially in counties with high Federal ownership.

Energy Requirement - Little or no energy is used in land exchange.

5. Buildings and Other Facilities

There are 197 buildings having 207,548 square feet on the Lolo National Forest. There are 54 building sites utilizing approximately 105 acres.

Construction, maintenance, and reconstruction of administrative structures may cause short-term, localized impacts to the physical and biological environment, but the effects are insignificant on a Forest-wide basis since the structures occupy less than 100 acres. The facility maintenance and reconstruction program is assumed to continue at the current level under all alternatives.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Vegetative productivity will be lost during the life of the facilities.

Irreversible and Irretrievable Commitment of Resources - The vegetative productivity loss represents an irretrievable commitment.

Adverse Effects Which Cannot be Avoided - Although efforts have been made to landscape building sites, the presence of the facilities does affect natural appearance. Effects of soil disturbance will remain long after the facilities are gone.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Energy required for facilities in 1979 was 6.6 billion BTU's. In 1985 it is projected that use will be 6.08 billion BTU's. This use does not vary between alternatives.

6. Utility Transportation Corridors

A Federal and State interagency analysis has been made to define the lands which should be avoided in permitting or constructing linear right-of-way utility lines, oil and gas pipelines, and communication lines. The criteria developed through the Montana Corridor Study is contained in the May 1982 Criteria for Identifying Corridor Exclusion Areas, Avoidance Areas, and Windows in Montana. Guidance in using corridor planning criteria is contained in a Region One letter to Forest Supervisors, 1990, Corridor Planning Guidance, October 7, 1982. Exclusion areas are defined as areas where such facilities are not allowed. Avoidance areas are defined as areas where establishment and use are not in consort with land use/land managemnt objectives. Windows are the land areas most suitable for the siting of linear facilities in planning processes, but even these windows need detailed, project-specific analyses to determine their ultimate suitability. Table IV-9 displays the results of applying the Regional guidance to the Forest Plan management areas. This display does not change by alternative.

Table IV-9: Corridor Exclusion, Avoidance and Window Areas by Management Area, Lolo National Forest

Management Area No.	Planning Designation	Management Area No.	Planning Designation	Management Area No.	Planning Designation
1	Window	10	Window	19	Window
2	Avoidance	11	Avoidance	20	Avoidance
3	Avoidance	12	Exclusion	21	Avoidance
4	Window	13	Avoidance	22	Avoidance
5	Window	14	Avoidance	23	Window
6	Avoidance	15	Window	24	Avoidance
7	Avoidance	16	Window	25	Window
8	Avoidance	17	Window	26	Window
9	Avoidance	18	Window	27	Window
				28	Avoidance

The 1977 East-West Corridor Study (see Section 14, Chapter II, page 82) identified four corridor segments on the Lolo Forest for consideration. Corridor Segment R-15 (Jocko Pass) is located within essential grizzly bear habitat in all alternatives. This habitat is classed as an Avoidance Area. This classification does not prohibit use, but siting would need to include high mitigation costs for structure location and construction timing constraints.

Corridor Segment R-16 (east of Missoula) contains narrow paths that weave around the avoidance areas in all alternatives. Engineering obstacles and roading constraints that would be associated with siting in these paths would incur high costs. Corridor Segment R-17 (Superior-Thompson Pass) contains a concentration of Avoidance Areas at the west end that makes it impossible to site utilities without crossing these areas in all alternatives. Alternatives a, c, and d have several more Avoidance Areas but these can be bypassed during siting of a facility. Alternatives b and e have additional Avoidance Areas that span the segment, placing high constraints on the location of facilities. Alternatives f and g contain Exclusion Areas, making the segment unavailable for siting utilities. Corridor Segment R-26 (Lolo Creek) contains several Avoidance Areas in all alternatives. Straight tangent lines would be very short. Exclusion Areas are encountered in Alternatives f and g.

There are significant oil and gas pipelines crossing the Forest. The Yellowstone Pipeline runs from east to west across the Forest, and the Montana Power Company owns a natural gas pipeline crossing the Missoula Ranger District in Deer Creek and Pattee Canyon. There are several transmission lines occupying Lolo Forest lands, ranging in voltage from 100,000 to 500,000. In addition, there are many distribution lines at lower voltages. Rights-of-way for electric transmission facilities occupy approximately 1,490 acres under special-use permits, plus 2,099 acres for Federal powerlines under memorandums of understanding.

Prior to construction of a transmission facility an appropriate environmental analysis is required to establish the final location, construction, and maintenance stipulations for the facility and its supporting road system.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Unoccupied corridors have no effect. Occupied corridors are cleared of trees that interfere with maintenance or pose a safety hazard. Low growing vegetation and trees where adequate clearance exists are allowed to remain. The productivity potential is generally not attainable as long as the facility remains.

Irreversible and Irretrievable Commitment of Resources - As long as a facility is operational, the ground that it occupies is dedicated to that use, and other uses are secondary benefits. The authorization is essentially an irreversible commitment. Commercial timber production is irretrievably lost on much of the right-of-way. The right-of-way use precludes its consideration for wilderness and roadless management.

Adverse Effects Which Cannot be Avoided - Rights-of-way cannot be hidden and have an impact on the visual resource, especially in otherwise undeveloped landscapes. Access roads, even if closed to vehicle use, provide an easier travel route from which to hunt big game and possibly deplete or scatter game animals in very localized areas. Other impacts can be mitigated or are of such short duration as to be essentially inconsequential.

Conflicts with Objectives of Other Land Management Plans, Policies, and Controls - Conflicts can occur if environmental analyses and decisions are based solely on intragency concerns; proposals that traverse several ownerships need to have interagency (Federal, State, and if available, local) representation.

Energy Requirements - Construction of a facility requires a great amount of energy by the utility or agency owning the facility; operation and maintenance requirements are substantially lower. Forest Service energy requirements for construction monitoring and facility inspection are minimal.

J. Cultural

The Lolo National Forest has supported a Cultural Resource Management Program since 1975. The program's responsibilities are to inventory, evaluate, and manage cultural resources located on National Forest System lands. This is done in compliance with various Federal and State laws applicable to cultural resource management. Forest personnel routinely consult with the Montana State Historic Preservation Office, the Advisory Council on Historic Preservation, as well as resident Native American groups on all projects that may affect cultural resources or places, important in traditional Native American religion.

The Lolo Forest contains a rich and diversified cultural history represented in prehistoric and historic sites including early Native American camp sites, rock art, quarries, cambium peeled trees, and a variety of other activity areas used before the arrival of Euro-Americans and written history. Historic sites, on the other hand, include 19th and early 20th century mining areas, logging camps, homesteads, roads and trails, as well as early Forest Service administrative sites. The historic period begins with the introduction of written records by Euro-Americans which, in this area, begins in 1805 with the arrival of the Lewis and Clark expedition.

Since 1975 the Forest has systematically inventoried its lands for cultural resources in advance of ground disturbing activities. To date, well over 400 prehistoric and historic sites have been inventoried and many of these are eligible for inclusion on the National Register of Historic Places. The Lolo Trail, a prehistoric (known as Nee Mee Poo Trail) and historic travel route that crosses the Bitterroot Mountains, made famous by the Lewis and Clark expedition and by the Nez Perce Indians during the War of 1877, is a National Historic Landmark. Sites such as Rock Creek Cabin, the Ninemile Remount Depot, and Fort Fizzle are other sites listed on the National Register of Historic Places. Savenac Nursery, Camp Paxson, and several historic lookouts have been determined eligible for listing on the National Register.

If a significant site may be affected by proposed activities, alternatives to mitigate or minimize the effect are developed in consultation with the State Historic Preservation Office and the Advisory Council on Historic Preservation. Mitigation measures employed by the Forest in recent years include: formal excavation of the two prehistoric sites that would have been damaged by road construction and removal of two badly deteriorating historic structures from their original location to sites where they serve as interpretive areas for the public.

The goals of the Forest's Cultural Resource Management Program are to comply with the various Federal and State cultural resource laws and regulations and to integrate these resources on equal footing into the Forest management program. To date, Draft Management Guidelines for compatible management of the Lolo Trail with other resource objectives have been written. Also, a prehistoric overview has been written for the Lolo and Bitterroot National

Forests that describes in detail previous archeological work and the current knowledge about the prehistory of the area.

Vandalism and irresponsible collecting are, and probably will continue to be, an increasing problem on the Forest. Public information and awareness as well as law enforcement actions will be used to counteract this problem.

There is no difference between alternatives for cultural resource compliance because the process remains the same.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The Forest Service recognizes that cultural resources are finite and a nonrenewable resource. For these reasons, effective management recommendations are implemented to protect and maintain those cultural resources determined eligible for listing on the National Register of Historic Places.

Cultural resource inventory and evaluation is an integral part of the planning process for any ground-disturbing activity on the Forest. Also, a complete Forest-wide inventory for cultural resources has been underway since 1975. This inventory and evaluation system should ensure that all significant cultural resources are managed according to FSM 2360.1 and 36 CFR 800.

Irreversible and Irretrievable Commitment of Resources - Cultural resources are a finite and nonrenewable resource. Once they are damaged or destroyed they, and the information they contain, are lost forever. For these reasons, the Forest Service is mandated by law and Regulation 36 CFR 800 to identify and evaluate cultural resources. Long-term management plans and/or mitigaton projects are implemented in conjunction with the Montana State Historic Preservation Officer and the Advisory Council on Historic Preservation.

Adverse Effects which Cannot be Avoided - Adverse effects to cultural resources must be mitigated in compliance with FSM 2360.1 and 36 CFR 800. With adequate time, mitigation plans can be processed and implemented.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Conflicts with other plans can be either from direct impact to cultural resources from ground or site disturbances or from indirect impacts such as easier access where areas are being developed. These conflicts are identified and can often be resolved during the planning process where provisions are made to cope with cultural sites.

Energy Requirements - Energy requirements are low and consist of vehicle transportation to and from the fields and typing of reports.

K. Fire

1. Suppression

Historically, fire has been a frequent occurrence on the Forest. Data for 1960 through 1979 indicates an average of 180 lightning- and person-caused fires per year. The majority of wildfires are lightning-caused; however, most large wildfires have been person-caused. Future fire occurrence is expected to remain at or near the 180 level with individual years showing great variation.

The purpose of fire suppression is to minimize damage to valuable resources by controlling and extinguishing fires. The extent of fire suppression activities depends on fire starts and weather. Alternatives with greater amounts of undeveloped land will require different suppression techniques and cost than areas where road development is greater.

Successful suppression has a favorable short-term effect in areas where timber management is prescribed because it protects the stands from burning. Suppression also results in the establishment of old-growth forests. Old-growth dependent animals are favored and thermal cover is provided to many wildlife species even though forage is suppressed or eliminated by competition with the conifers. Protection from burning will lead to accumulation of fuels above natural levels and can result in large damaging fires when burning conditions are severe. Excessive heat generated by fires in dense, dry fuels consumes litter and duff which can affect productivity and soil stability. Stream sedimentation is likely to occur after a hot litter- and humus-consuming fire (USDA Forest Service, 1978). Loss of timber to insects and disease is likely to increase because of the weakened condition of surviving trees.

Fireline construction can increase the potential for soil erosion. The potential for soil movement is increased by use of heavy equipment on steep slopes or on soils susceptible to erosion.

The average annual cost of fire suppression for the Forest for the last 5 years is $402,200. During this period suppression costs ranged from $100,500 to more than $2,000,000 a year. Suppression costs will always have a possibility for wide variation from year to year because of the variation in burning conditions. The fire suppression program creates jobs and income in the local economy.

In those alternatives with greater levels of wilderness acreage, there will be more unplanned ignition prescribed fire and therefore the level of supression will be less. Fire suppression in general is based on economic considerations which tend to be the same under all alternatives.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Effective fire suppression will minimize damage to existing stands of timber. However, the long-term maintenance of existing old-growth stands may reduce productivity.

Irreversible and Irretrievable Commitment of Resources - Since the fire suppression program could be curtailed at any time, there is no irreversible commitment of resources.

Adverse Effects Which Cannot be Avoided - Loss of soil due to construction of firelines will occur despite preventive measures. Buildup of fuels will continue in areas protected by fire suppression.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Smoke emissions due to fire may at times exceed State clean air standards, but the suppression activity attempts to reduce this problem.

Energy Requirements - Energy required in the fire suppression program is dependent on the number and kind of fires. In extreme fire years, this use can be a substantial portion of the total energy expended by the Forest.

2. Prescribed Fire - Unplanned Ignition

Managed fires are fires which will be allowed to burn under observation in accordance with a predetermined set of conditions. The Forest has 13 areas which are under managed fire prescriptions. The same option is available to proposed wilderness and roadless areas managed for semiprimitive recreation.

The effectiveness of the managed fire program is dependant on factors such as fuel loading, proximity to valuable resources, and current weather conditions. Fires tend to increase forage for big game by removing forest tree canopies and tall shrubs, and encourage growth of forbs and low shrubs. Fires may increase vegetative and animal diversity, increase the habitat for animal species that prefer early seral stages, and decrease the habitat for those that prefer dense forests. In addition, accumulated fuels are consumed which will reduce the severity of future fires. Managed fires seldom burn both overstory and understory because the hotter fires are usually suppressed. Even so, exposed soils lead to increased runoff and sedimentation which results in lower water quality for a short period of time. Fires may temporarily reduce visual and air quality.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The act of allowing a fire to burn can have a long-term effect on the species of vegetation and animals occupying the area. A future generation of the overstory (trees or shrubs) may be entirely destroyed. Some of the present understory, especially shrubs, is completely removed. The native productivity is not destroyed and, in fact, may be temporarily enhanced by increasing the availability of minerals in the ash.

Irreversible and Irretrievable Commitment of Resources - If the fire is allowed to burn, the consumed material is irretrievable.

Adverse Effects Which Cannot be Avoided - The aftermath of the fire will remain visible for a short time. Soil is bared and water quality may be reduced for a short time by accelerated erosion. Smoke will be generated into the atmosphere.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - The managed fire progam considers ownership of adjacent lands and fires are suppressed where other lands could be endangered.

Energy Requirements - Some energy will be consumed in monitoring the planned fire. This will be a minor amount compared to the energy needed to suppress such fires and a minor portion of the total Forest use.

3. Prescribed Fire - Planned Ignition

The Forest employs the use of prescribed fire for a variety of resource management objectives. These objectives include seedbed preparation, maintenance of seral vegetation, favorable wildlife habitats, mosiacs of age classes and vegetative types, reduction of susceptibility of vegetation to insect and disease, and reduction of fuel loadings.

The Forest accomplishes 1,000 to 3,000 acres of prescribed burning annually for wildlife, underburning, and backlog slash. An additional 3,000 to 4,000 acres of prescribed burning is done annually for site preparation and slash disposal. In addition, 10,000 to 15,000 acres annually are planned for prescribed burning to maintain ecosystems primarily in the Douglas-fir series habitat types.

The desired effects of prescribed fire include reduction of fuel loading and lesser risk of high intensity wildfires, reduction of competition to promote the establishment of desired plant species, maintenance of seral plant communities, and maintenance of mosaics of vegetative conditions. Undesirable effects which can result if fire intensity is too great are mortality of desired trees, shrubs, and perennial grasses as well as reduction of organic matter in the soil and increased risk of soil erosion.

The variation in planned prescribed burning by alternative is related to the creation of activity fuels through timber harvest and burning for wildlife habitat goals. Table II-44 shows the first decade level of prescribed burning for each alternative.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - High intensity wildfires often destroy resources such as timber which can reduce availability of forest products for several decades. Uncontrolled fires can also destroy improvements such as fences, campgrounds, and buildings which are needed to manage the Forest. On the other hand, prescribed or low intensity fires can increase long-term productivity by speeding nutrient cycling processes, reducing climax species which have increased incidence of pathogen or insect epidemics, and decreasing moisture stresses due to uncontrolled stocking.

Irreversible and Irretrievable Commitment of Resources - Generally, wildfires or prescribed fires cause no irretrievable or irreversible commitment of resources. Evidence from the most catastrophic fires in western Montana and northern Idaho indicate essentially all burned areas will return to a productive status over a period of several years.

Adverse Effects Which Cannot be Avoided - These include short-term reductions in air quality due to smoke.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Prescribed fires are ignited under certain weather conditions with the objective of avoiding conflicts with existing State and Federal Air Quality Standards.

Energy Requirements - Fire management activities have substantial energy requirements from time to time; however, the short-term expenditure of energy resources should result in long-term energy savings.

L. Range

Properly managed, livestock grazing at the levels projected (Table IV-9) will have a minimal effect on the environment. Water developments, grassland burning, fencing, and noxious weed control activities may have effects on a site but their effect on the Forest environment will be minimal. These activities will reduce the risk of environmental degradation by controlling use to acceptable levels or increasing available forage. In riparian areas, vegetation removal, streambank trampling, and soil compaction can have significant effects on soil, water, vegetative productivity, fisheries, and recreation use (Platts, 1981). Proper cattle management can minimize the risk of adverse environmental effects. Cattle use is not expected to exceed 14.3 thousand animal unit months per year, and no significant competition between cattle and elk will occur at that level (Ormiston, 1983).

Table IV-10: Potential Livestock Forage, First Decade
(thousand AUM's)

Alternative							Benchmark		
a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LEV
13.8	15.1	16.8	14.3	12.4	13.3	11.3	13.0	15.9	0.5

The majority of livestock forage is produced in connection with timber harvest and is classed as transitory range. Thus, those alternatives which produce a relatively high volume of timber, such as Max PNV and Alternative c will also have the potential to produce a higher volume of livestock forage.

Table IV-11: Anticipated Livestock Use, First Decade
(Thousand AUM'S)

	Alternative							Benchmark		
	a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LEV
1981	13.8	10.1	10.9	13.8	13.8	13.8	13.8	13.8	13.8	13.8
1982-1985	13.8	10.6	11.5	14.0	13.1	13.5	12.6	13.0	14.7	12.8
1986-1990	13.8	11.9	13.0	14.3	12.4	13.3	11.3	13.0	15.7	0.5

Cattle grazing may annoy some recreationists because of smells, flies, visibility, noise, and manure on trails and around campsites. The grazing program adds to the PNV of the Forest; however, total contribution to PNV is less than 1 percent under any alternative. There are 59 cattle ranchers holding permits on the Forest and most must hold other jobs to make a living. The few larger ranchers are dependent on the Forest forage for a significant portion of their ranching operation. These ranchers perpetuate the "old west rancher" lifestyle which is part of the valley heritage.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The grazing of livestock on the Forest will have little effect on long-term productivity. A few areas near watering places and salt will continue to be overused, which reduces the vegetative production of these small areas.

Irreversible and Irretrievable Commitment of Resources - There is a long tradition of permitting cattle grazing on the Forest. As long as this tradition and the need exist, livestock will be permitted on the Forest within the carrying capacities. The forage grazed by these livestock is a commitment of that resource.

Adverse Effects Which Cannot be Avoided - Some conflicts will continue to exist between livestock and big game. Facilities (fences and water developments) on range lands will affect the visual resource. Some recreationists may be annoyed by smells, flies, sounds, and manure in some areas. Compaction and vegetation change will continue to occur in heavily used areas. Fish habitat and water quality may be adversely affected if grazing controls are absent.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Required - Some energy is required in monitoring the resource and in the maintenance of facilities. This will not be a significant portion of the total used on the Forest. Permittees will also use energy in managing livestock while on the Forest and in moving livestock to and from Forest range lands.

M. Insects, Disease, and Noxious Weeds

Significant timber loss is occurring from mountain pine beetle infestations. Lesser mortality is caused by dwarf mistletoe infestations and tree root diseases. Further discussion is found in Section 14 of Chapter III.

The primary tool available for pest management is reforestation with selected tree species following timber harvest and/or prescribed burning. Species manipulation allows selection of trees that are tolerant or resistant to pests that are currently present or that will be present in the future.

There are no plans for use of pesticides on the Forest under any alternative. Should the occasion arise, such proposals would be subjected to analysis and public involvement prior to initiation.

Roads provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time noxious weeds are being found in wildernesses or other undisturbed sites. The basic problem in noxious weed management is the lack of a good understanding of the autecological attributes of the weed or their synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work has related to cereal crop and range or pasture land control, with limited emphasis on understanding the basic life cycle of the plant.

While herbicide control may be appropriate under special conditions, the topography and vegetation cover on the Lolo Forest make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds, and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot, and Flathead Forests. Preliminary results of the study suggest a number of management practices may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.

No modifications were made by alternative to cope with insects and disease. Those alternatives that harvest greater timber volumes would allow, on the average, a higher level of harvest of diseased stands which would result in less mortality loss and healthier residual stands. Thus Alternative c with the largest harvest volume would have less loss of utilization from insects and disease while Alternative g with the lowest harvest volume would have greatest impacts. Other alternatives would vary between b and g.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The application of appropriate silvicultural methods to control insects, disease, and noxious weeds increases the long-term productivity of the Forest.

Irreversible and Irretrievable Commitment of Resources - The only control measure proposed by the Forest involves silvicultural means. Immature and unsalvaged commercial timber killed by insects represents an irretrievable utilization loss of that resource. Areas involved in insect or disease outbreaks may become economically unfeasible to harvest due to low residual values.

Adverse Effects Which Cannot be Avoided - None identified.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - There could possibly be a conflict in areas of checkerboard ownership where owners independently decide to control/not control and by which method.

Energy Requirements - The pest management activities require minimal amounts of energy.

N. Timber

Timber management consists of a series of activities which are prescribed to regulate growing, tending, harvesting, and regenerating wood crops on suitable lands. The discussion includes the effects of assigning different amounts of suitable acreage by alternative and the effects of silvicultural harvest systems, logging methods, slash disposal, site preparation, reforestation, and timber stand improvement. The Base Sale Schedule does not include unregulated volumes.

The Forest harvests timber from areas identified as having a suitable land base for timber production. The amount of this acreage (Table IV-12) and the volume of timber removed varies by alternative due to differing emphases of management for timber and other resources.

Table IV-12: Acreage Suitable for Timber Production
(thousands of acres)

Alternative							Benchmark		
a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
1402	1099	1420	1239	1326	1204	956	1207	1320	0

The long-term sustained yield capacity (LTSYC) under each of the alternatives is shown in Table IV-13. The LTSYC is the highest uniform (nondeclining) wood yield from lands managed for timber production that may be sustained under a specified intensity of management consistent with multiple use objectives.

Table IV-13: Long-term Sustained Yield Capacity
(million board feet/million cubic feet)

	Alternative							Benchmark		
	a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
MMBF	201	173	211	178	191	171	174	176	240	0
MMCF	56	48	59	49	53	48	48	49	67	0

The 1980 RPA Revised Statement of Policy (FS Manual 1920, R-1 Supplement 5) requires a comparison of the LTSYC with the projected growth rate of timber in the year 2030 for the Proposed Action. The policy direction is to achieve and maintain 90 percent of the potential level of growth consistent with the provisions of NFMA. The LTSYC is 49 million cubic feet (MMCF) per year in 2030 for the Proposed Action; the projected growth of timber is 29 MMCF per year by 2030, or 60 percent of the LTYSC.

The low percentage of growth to LTSYC is due to several factors: 1) growth is still coming from a large acreage that has had no stocking control and is not growing at potential; 2) stands exist that are not cost efficient to manage due to past activities and are not producing near their potential; and 3) constraints imposed to facilitate meeting other resource objectives (fish, wildlife, water quality, visuals) and nondeclining even flow lengthen the time period for conversion of old-growth timber, thereby resulting in fewer acres growing at their potential. Ninety percent of LTSYC is not reached until the 10th decade, reflecting the completion of bringing all suitable acres under management.

The ability to approach the 90 percent level by 2030 is not practical. To accelerate growth on currently managed sites and to bring unmanaged lands under management to meet the objective of 90 percent is not commensurate with other resource objectives and regulations, i.e., nondeclining even flow. Costs to accelerate management would be high and not cost effective.

The differences in the amount of timber produced between alternatives is dependent upon two major factors. The first is the amount of suitable lands available to produce timber (Table IV-12) and the intensity in which those lands are managed. The same acreage of suitable timber lands can have a wide range of outputs depending upon the amount of stocking control (precommercial thinning), intermediate treatments (commercial thinning), and the rotation lengths used in their management (Table II-44). These treatments have effects on the economic returns, species being managed, and speed in which a viable commercial product can be raised.

The most efficient silvicultural treatment to accelerate tree growth in naturally regenerated stands on the Lolo Forest is to precommercial thin at approximately stand age 20. This treatment releases selected crop trees to retain their fast juvenile growth rates, allows for management of the best growing species for a particular site, and helps in producing a larger diameter tree on a shorter rotation. Precommercial thinning is a costly treatment that must be evaluated for its economic viability and its need to meet management objectives. This practice is used in all alternatives but in varying amounts (see Table II-44).

Alternatives a and c have the highest long-term sustained yield capacity (LTSYC) and Allowable Sale Quantity, and the highest acreages suitable timber production. Alternative f has the lowest LTSYC but has a moderate amount of suitable acres. However, the management intensity on those acres is generally low, i.e., low investments in reforestation (planting) and precommercial thinning. Alternatives in between display varying amounts of suitable timber-producing acreages and varying intensities of management on those acres.

Alternatives with the largest acreages of suitable timber have the potential to provide the most beneficial effect on the timber resource. These benefits include:

-- Improved age and size class distribution;
-- Maintenance of healthy, vigorous stands;
-- Reduced threat of insects, disease, and wildfire;
-- Better utilization of growth potential on timber growing sites; and
-- Production of higher volumes of timber.

Large acreage assignments afford greater flexibility in achieving a given Base Sale Schedule and provide for more latitude in the geographic or spatial distribution of the harvests.

The combination of volume production and suitable land base varies by each alternative according to the management objectives and management intensity of the alternative. Alternatives a, c, d, and e provide the best distribution of age classes Forest-wide because of their harvest schedule and acreage assigned as suitable timber base.

1. Silvicultural Harvest Systems

Clearcutting and shelterwood harvest systems, which produce even-aged timber stands, are the main silvicultural systems used on the Forest. These systems account for over 90 percent of the volume harvested. Selection and group selection systems maintain uneven-aged stands and account for the remaining volume harvested in regeneration cuttings.

a. Even-aged Systems of Timber Harvest

Even-aged timber management is accomplished using three harvest systems to varying degrees in each alternative. These are clearcut, seed tree, and shelterwood. In clearcutting, all trees are removed from the area in a single cut. In seed tree and shelterwood cutting, a few trees, to many, are left in the area until seedlings have become established. These systems provide for regeneration of seral species which are the highest timber producers on a given site. The alternatives with the most acres suitable for timber management use the most even-aged harvest systems.

All three silvicultural systems are utilized in all alternatives. The amount of acres treated by a system varies by alternative but the application is the same. For instance, seed tree harvesting is the same for all alternatives but the number of acres treated will vary.

Even-aged management affects the visual resource by changing the characteristic landscapes. The greatest visual change would occur in the high timber harvest alternatives in which large areas are assigned to Modification or Maximum Modification visual quality objectives. Modification and Maximum Modification are generally associated with larger clearcuts. That portion of the Forest managed under Retention or Partial Retention visual quality objectives is typically even-aged managed with smaller cutting units and greater attention to unit shape and location. Even-aged management on steep slopes typically has the greatest impact on the visual resource.

Table IV-14: Visual Quality (% of Inventoried Retention and Partial Retention Visual Quality Maintained)

Alternative							Benchmark		
a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LEV
90	89	57	71	52	73	56	60	28	100

As trees are removed, evapo-transpiration is reduced and more water is infiltrated into the ground water system. This is more pronounced with even-aged management because the entire mature forest canopy is removed. These systems also have potential for adverse soil effects when ground cover is removed for a short period of time and soil is exposed to erosion (Beth Lahmy, 1967; Megahan and Kidd, 1972). In extreme cases, this can lead to mass failure or the slipping of large areas of soil and rock on steep slopes and clay soils (Dryness, 1967; Fredrickson, 1970; Megahan, 1971). Proper analysis should identify these potential problem areas and a harvest system be selected to avoid excessive damage.

The increase in infiltration and the tendency for openings to accumulate snow result in increased water yield which may occur at the time of peak flow. The water regime for an area harvested by an even-aged management system will generally recover to preharvest conditions 20 to 90 years after harvest (Garn and Malmgren, 1973). This increased flow can be of benefit for downstream irrigation if storage capacity exists. Increasing the flow at peak times may have a negative effect on streambank stability and increase channel erosion. Proper analysis can provide the opportunity to limit the increase and avoid the negative effects.

Even-aged management of riparian areas affects stream environments if trees are removed from the streambanks (Weaver, 1983). Bank stability is reduced and debris necessary to maintain pools could become in short supply. Removal of all trees from long reaches of streambank would increase water temperature, possibly to the degree of adversely affecting trout populations. The effect on total fish population of the Forest depends partly on the amount of riparian timber land managed with even-aged systems (Franklin and others, 1981). The riparian areas will be managed to give preferential treatment to the maintenance and enhancement of the fisheries and all other riparian-dependent resources.

Even-aged harvest systems provide the best opportunity for reduction of fire hazards. Clearcuts are the least costly because no living trees need protection during fuel elimination. Slash and other fuel reduction in seed tree and shelterwood harvests is more difficult and costly because the standing trees must be protected.

More forage is produced by clearcut and seed tree harvest systems than all other systems. Less forage is produced with the shelterwood system and it persists for a shorter period because trees occupy more of the site for a longer time. Forage produced under a partial canopy seems to be less palatable than that produced in full light. Transitory range for stock is created when harvest occurs on cattle and horse allotments.

Even-aged harvest causes a reduction in big-game cover, but increases diversity for other wildlife when openings are created in dense canopies. Edges are created for those wildlife species which rest or hide in dense canopies and feed in the openings. In all alternatives, a goal of retaining at least 10 percent of the suitable timber land in old-growth forest at all times was prescribed. The goal was exceeded in all alternatives because other constraints were more limiting, or forested lands not suitable for timber production produce old-growth stands unless catastrophic fire, insects, or diseases kill the trees.

Even-aged harvest systems provide the best opportunity for control of insects and disease because all diseased or susceptible trees are removed and a young, vigorous stand is initiated. Clearcutting may be the only system which provides this control if a pathogen is prevalent. In some cases, where shade is necessary for seedling survival, a shelterwood cut is appropriate, providing the overstory is removed before the young trees can be infected, usually within 7 years.

Timber productivity in the future is enhanced by proper application of any silvicultural system. Old, slow-growing trees are replaced by young, vigorous trees, and the higher growth rate can be sustained by weeding, thinning, and other intermediate cutting.

Clearcutting is the least costly method of harvesting trees. Seed tree and shelterwood cutting cost more because a second entry is required to remove the overstory. Costs vary by log size, land slope, yarding distance, and other factors but the removal of all trees from a site in a single entry is less expensive per unit of volume than multiple entries. Even-aged management cutting units are easier to lay out and mark than other harvest units, so less labor and time is required per unit of timber.

Even-aged management can adversely affect the recreation experience by altering the natural appearance or disrupting trail systems. The experience may be enhanced to some extent by careful placement of openings to create open vistas. Alteration of the natural appearance reduces the values attributed to the roadless and wilderness resources.

Short-term Use vs. Maintenance & Enhancement of Long-term Productivity - Even-aged harvest systems provide the best chance to realize the long-term productivity. To a large extent, insects and diseases are controlled, young and vigorously-growing trees replace slow-growing trees, fire hazards are reduced, and a desired mix of tree species can be introduced. However, with these systems the visual quality and dispersed recreation experience will change. Some soil is displaced and peak flows of water are increased. Habitat for wildlife species preferring closed canopies is reduced, but habitat for those species preferring openings is increased.

Irreversible and Irretrievable Commitment of Resources - Areas treated with even-aged systems have a high road and regeneration investment. For all practical purposes, most areas previously harvested are irreversibly committed to timber harvest in the future. The wildlife habitat changed by the harvest and the dispersed recreation opportunities lost or changed are irretrievable. Even-aged management with associated roads changes the natural character of an area such that a roadless character cannot be retrieved.

Adverse Effects Which Cannot be Avoided - Visual quality is generally lowered by even-aged harvest. Some soil will be eroded and water quality will be lowered. Wildlife habitat will decrease for species preferring dense canopies. Fish habitat may be changed by increased sedimentation. Semiprimitive and wilderness opportunities and experiences will essentially be eliminated from those areas harvested by even-aged management systems.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Since most of the timber on the Forest will be harvested by even-aged harvest systems, most of the energy required will be directly associated with these systems. Energy consumption associated with timber harvest is relatively high.

b. Uneven-aged Systems of Timber Harvest

Selection harvest, an uneven-aged management system, is prescribed for riparian areas along streams larger than first order and in visually sensitive areas. This system selects individual trees that are mature or over-mature and leaves the remaining canopy undisturbed. Group selection involves harvest of small groups of mature trees when circumstances permit. This option creates small openings, usually limited to several feet in diameter. The selection harvest system has minimal effect on the visual resource. Water quality and quantity are not measurably affected because the canopy is not significantly altered, soils are not unduly disturbed, and the remaining trees are able to respire the extra water (Rice and Others, 1972).

Trees left in the riparian zone can be used to enhance wildlife and fish habitat. Reserved old-growth timber and trees left to die to create habitat for cavity nesters or debris dams for fish habitat become unavailable and cannot contribute to the Program Sales offered.

Fire and slash disposal are difficult to manage in selection harvest systems. There is little opportunity to reduce natural fuel loads and any slash generated by a harvest adds to the loading problem. There are few openings large enough to permit piling of slash away from the residual stand. Handpiling and winter burning can be done in certain areas, and slash can be reduced by requiring that whole trees (untrimmed) be yarded and the slash be disposed of in the yard area. Handpiling is a very expensive treatment.

Little forage is produced by selection harvest except in some group selection units. The forage produced in these small openings is not great and tends to disappear as the canopy of the remaining trees expand. Selection harvest generally has little effect on the cover requirements for big game.

It is more difficult to control insects and disease with selection harvest than with even-aged harvest systems. If the infection is not large, some control can be attained by group selection of the infected trees. Selection harvesting promotes the regeneration of shade-tolerant species. Some of these tree species are more susceptible to disease because they are in the fringe of their range, and all trees are subject to damage by the repeated harvest operations. Long-term timber production may be reduced by these elements.

The selection system is more costly to apply than even-aged management systems because each tree must be marked. Logging costs are high because little volume per acre is removed, and care must be taken to protect the residual stand.

Recreation quality is little disturbed by selection harvest systems. During the harvest operation and for a short time thereafter, the noise and debris may disturb recreationists but the evidence of the disturbance declines rapidly following completion of slash disposal.

Short-term Use vs. Maintenance & Enhancement of Long-term Productivity - Timber harvest by the selection system has little effect on the natural long-term productivity of the area. Compared to even-aged management systems, the habitats of fish and many wildlife species are at least maintained and the opportunity to enhance that habitat exists. Visual quality is maintained. Uneven-aged management results in more frequent reentries in an area; hence a higher potential for damage to residual stands, increasing the opportunity for insect and disease attack. More frequent reentries result in more frequent disturbances to wildlife populations.

Irreversible and Irretrievable Commitment of Resources - The chosing of selection harvest for an area does not commit that area to timber harvest in the future, although it is likely these areas will continue to be harvested by this system in the foreseeable future. The timber that could have been grown by applying a more productive timber harvesting system is irretrievable.

Adverse Effects Which Cannot be Avoided - There are few adverse effects associated with selection harvest. Recreation can be disrupted for a short time while the timber is being harvested. Uneven-aged management requires repeated entries into the same area resulting in frequent disruptions to the wildlife populations and possible short-term displacement.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Since a small percentage of the total harvest is accomplished using the selection harvest system, only a small portion of the energy required for timber removal is used by this action.

2. Logging Methods

Logging system options on the Forest include tractor, ground lead cable, skyline, and aerial yarding. The choice of a logging method depends largely on land slope and sensitivity of the soils. On slopes under 40 percent, tractor yarding is generally appropriate. On slopes greater than 40 percent, cable or skyline systems will often be used. Helicopters are not likely to be used extensively within the next decade due to the high cost.

Table IV-15: Volume Harvested by Logging Method

Logging Method	% Harvested
Tractor	40
Cable (Groundlead)	10
Skyline	49
Aerial	1

a. Tractor Logging

Most of the soil disturbance associated with logging is due to the removal of the timber from the site. Logging with tractors may impact as much as 28 percent of the area. The actual amount of soil disturbance will vary depending upon site-specific conditions. Even with approximately one-quarter of the area disturbed with tractors, additional scarification is usually required to insure adequate regeneration. Soil compaction may be a problem on wet soils, especially those with clay or high silt content (Cullen and Montagne, 1981; Davis, 1978). Compaction causes reduced infiltration capacity, air permeability, and productivity (Froelich, 1979; Froelich and others, 1980). Compaction can be reduced greatly by limiting tractor use to the dry season, requiring a cushion of snow, or operating on frozen ground. Skid trails can be located away from problem areas but, even with restrictions, some soil disturbance inevitably occurs when tractors are maneuvered in a logging unit. Most topsoils on the Forest are thin. Displacement or mixing of this topsoil can change the fertility of disturbed areas. On sensitive soils, the number of skid trails can be limited or another logging system employed.

Removal of the organic layers or low-growing vegetation in skid trails can expose the soil to erosion and overland flow during intensive rainstorms. In these situations, the Forest is directed to apply proper and timely erosion control measures. Tractors are not allowed to operate in or parallel to streams; crossings will be planned to minimize any sediment.

Tractor logging has little effect on big-game cover, and the major effect is the removal of trees (Lyons, 1979). Forage growth may be stimulated by the scarification caused by tractors. Tractor logging is the least expensive method available for moving logs from stump to landing and results in a greater return to the U.S. Treasury and payments to the county.

Noise of logging operations may cause local, short-term degradation to the recreation experience. In alternatives with low timber harvest levels, the disturbance will be minimal because only a few timber sales will be active at any one time. In alternatives with high timber harvest levels there will be more sales, spread over a larger portion of the Forest, and the recreation value in these segments of the Forest may be lowered.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Tractor yarding is the least expensive method to yard logs. In most cases, tractor logging has little effect on long-term productivity. However, it is inevitable that some tractor logging will occur on wet soils or on isolated pockets of clay soils where soil compaction may occur and productivity be affected. In all cases, some soil will be displaced, which may affect the long-term productivity and, if transported to streams, may lower water quality and fish habitat. These water quality effects should be minimal and short lived.

Irreversible and Irretrievable and Commitment of Resources - Once a stand of trees is tractor logged does not irreversibly commit the area to tractor logging in the next generation. However, if the road system is designed to accommodate tractor logging, and tractor logging is the most economical harvest method, there is a strong possibility that tractors will be used again in the future.

Adverse Effects Which Cannot be Avoided - Tractor logging can leave skid trails which are visible to Forest visitors. However, these trails will revegetate. During the logging operation, noise and dust are generated by tractors and some soils are disturbed.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Most of the energy used is by the tractor in this method.

b. Ground-lead Cable Logging

Ground-lead cable logging involves dragging the logs along the ground, generally on slopes steeper than 40 percent, and is rarely used on areas more than 800 feet from the landing area. About 10 percent of the harvest acres will be cable logged. Soil compaction and disturbance are greatly reduced compared to tractor skidding because the weight and tread of the tractor is absent. Many times the yarding corridors are not obvious to the Forest visitor, but more miles of road generally are required than with tractor logging.

Cable logging usually does not cause soil compaction (Froelich and others, 1980). However, because the logs are dragged uphill and the slopes are generally steep, soil erosion and over-land flow similar to tractor trails can occur, so erosion control may be required in the cable corridors.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The use of ground-lead cable systems to yard logs has no effect on the long-term productivity of a site.

Irreversible and Irretrievable Commitment of Resources - Once an area is logged by cable does not commit the area to be cable logged in the future. However, because the road system exists and considerable money will be invested in regeneration of a new stand of trees, it is likely that the area will be logged by a cable system in the future. The small amount of soil displaced by the use of the system is irretrievable.

Adverse Effects Which Cannot be Avoided - Noise and dust are created by cable logging although it is much less than with tractor logging. Some soils will be disturbed. The visual quality may be lowered for a short time.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - The energy used is expended by the cable-yarding machine in this logging method.

c. Skyline Logging

Skyline logging is defined as a cable system in which a block or carriage rides upon a line. About 49 percent of the harvest on the Forest will be skyline logged. A skyline system with a locking carriage can be used in partial cuts and thinning operations. The front end of the log is usually suspended above the ground, and soil disturbance, compaction, and the visual impacts of the area are greatly reduced from the previously discussed methods. Fewer roads are necessary because of the greater yarding distance capability of these machines. Since roads have the most permanent effects on the visual resource, the logging system which requires the least amount of road is the most desirable to meet visual quality objectives.

The skyline system has low potential for environmental degradation because soil disturbance is confined to the skyline corridors and few roads are necessary. Erosion control measures are relatively easy to apply.

The topography associated with skyline systems creates problems for the disposal of slash. Steep slopes limit the use of machinery and hand preparation of the slash is expensive. Skyline logging has little effect on forage or cover. Soil disturbance occurs on less than 23 percent of the area (Megahan, 1980) so forage growth is not particularily stimulated. The silvicultural system and post-logging fire have much more effect on forage and cover than this type of logging.

Skyline logging is more expensive than tractor or cable logging. Returns to the Treasury and the counties are reduced as the costs of yarding increase.

Any logging operation causes disruption of recreation traffic on the roads within the active sale area. Skyline equipment is difficult to move and may block the roads for several hours at a time.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Skyline logging causes little change in the long-term productivity of a site. Although there is some soil disturbance, little is eroded and water quality is seldom affected (Rice and others, 1972). If regeneration is delayed because of difficulties in site preparation, the productivity of the site is reduced.

Irreversible and Irretrievable Commitment of Resources - Roads are designed for use of skyline equipment and if harvest occurs in the future, some sort of skyline logging, or an equivalent system, will likely be used. There are no irretrievable commitments of resources.

Adverse Effects Which Cannot be Avoided - Skyline yarding systems have few environmental consequences; however, some soil will be disturbed. Since most skyline operations are on steep slopes, slash disposal will be more difficult and costly. There may be some visual quality reduction. Recreation opportunities will be reduced while the harvest is occurring because of noise, dust, and equipment on the roads.

Conflicts with Other Land Management Plans - None were identified.

Energy Requirements - Most of the energy expended is used by the skyline-yarding machine.

d. Aerial Logging

The only aerial system currently available is helicopters. Helicopter logging units can be blended easily into the uncut forest. Few roads are needed because external yarding distances are much greater than for conventional systems. Helicopter logging leaves the soil surface virtually undisturbed except at landings, which are one-quarter to one-half acre in size. Helicopter logging disturbs less than two percent of the soil surface in the logged area (Megahan, 1980). Because of the high unit cost of operations, helicopters are not likely to be used extensively on the Forest.

There is no soil disturbance or erosion, and water quality degradation is not a problem even on sensitive soils and steep slopes because the logs are lifted off the ground.

Slash disposal is difficult on areas logged by helicopters. No heavy equipment is available to pile slash or construct firelines. The difficulty of preparing slash, fire control, and the lack of mineral soil exposure can increase the probability of escaped fire and have a significant effect on regeneration (Smith, 1962).

There is considerable noise generated by helicopters. This can have an undesirable effect on the recreationist and perhaps wildlife in the area. However, helicopters can move a large volume in a short time period, so the disturbance is for a short time.

Helicopter logging is very expensive, and returns to the Treasury and the counties are reduced as the costs of yarding increase.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Helicopter logging, in itself, has little effect on long-term productivity. Problems with slash disposal and regeneration may lengthen the following rotation and therefore reduce the productivity of the site. Because of the high cost, intensive management of the stand, such as thinning, cannot be done.

Irreversible and Irretrievable Commitments of Resources - None identified.

Adverse Effects Which Cannot be Avoided - Slash disposal and regeneration will be costly. Recreation opportunities may be reduced for a short time period. Since the system is very costly, returns to the Treasury and counties will be reduced.

Conflicts with Other Land Management Plans - None were identified.

Energy Requirements - The helicopter uses a very large amount of fuel.

The following table displays energy requirements for timber harvest on the Lolo Forest. The variation by alternative is primarily due to the volume of timber harvested.

Table IV-16: Timber Harvest Energy Requirements in Billions of BTU's per Year

Alt.	Average Annual Harvest Over 120 yrs. (MMBF)	Average Annual Energy Over 120 yrs.	Dec. 1	Dec. 2	Dec. 3	Dec. 4-10	Dec. 11-12
a	131	144	122	146	146	146	146
b	123	139	118	141	141	141	141
c	154	167	141	169	169	169	169
d	123	128	111	136	136	136	184
e	146	156	114	150	150	150	204
f	132	145	118	118	142	142	188
g	130	143	99	132	132	139	191
PNV	179	183	126	157	197	119-240	231-289
RPA	136	148	135	157	176	89-219	167-192

3. Slash Control

Slash (unusable limbs, tops, and cull trees and logs) usually must be removed from a timber harvest unit before regeneration is feasible. The most common method of disposal is to burn the slash onsite, but in some cases large amounts are hauled away as firewood. The objective of slash control and fuels management is to maintain fuel loading within acceptable limits for prevention and control of wildfire. Burning also helps prepare sites for regeneration and eliminates barriers to animal movement (Lyon, 1979; Smith, 1962).

Slash may be tractor piled and burned on gentle slopes, handpiled and burned, or broadcast burned regardless of slope. In light fuel concentrations, limbs and tops can also be lopped and scattered. Where slash is not evenly distributed and a mature overstory has been left, underburning or jackpot burning of slash concentrations is the only effective method of disposal. Slash disposal activity varies directly with timber harvest level. Alternatives which generate the highest timber harvest also generate the highest level of slash.

Slash disposal can cause short-term degradation of Foreground viewing. In broadcast burning units, all residual vegetation is usually burned and the unit looks scorched and black. Visual degradation usually lasts only until the first growing season because forbs, grasses, and shrubs resprout or seed and grow rapidly after fire. Burned dozer piles leave scars that are readily visible onsite and, in some cases, from several miles away. Burned handpiles are not evident to the casual observer after a short period of time. Hot underburns can cause scorch marks on residual trees and kill their lower branches. These visual effects will last until red needles fall and the scorched bark falls off.

Air quality will be degraded by burning. Slash burning is generally carried out when fuels are dry and weather conditions permit control of fire. Suitable conditions occur for only a short time from the spring through fall. Fire weather conditions are monitored and burning allowed only when smoke can be dispersed. The higher the timber harvest level (see Timber Harvest), the greater the air quality problem because more slash will have to be burned in the short time available.

On gentle slopes, tractors are used to move slash into piles or windrows. This activity has a high potential for degrading the soil resource (Klock, 1975). If care is not taken, topsoil, litter, and duff can be pushed into the piles, exposing excessive mineral soil to erosion. If windrows or piles and soil beneath them are too dry when burned, the topsoil may be baked, become sterile, and made impervious to wetting (Dryness, 1976). The soil structure may be severely altered with little or no revegetation to protect the soil against erosion during the several years necessary for recovery. Handpiling and burning will have no noticable effect on the soil. Small areas under the piles may be scorched, but handpiles are usually small and burn cool enough to cause little damage.

Bennett (1962) describes methods of controlling burn intensities to reduce risk of soil degradation and erosion. Soil losses caused by burning can be no greater than natural rates if fires are properly managed (Glassy, 1982; USDA Forest Service, 1978).

Firelines constructed around burn units may be a source of sediment in the absence of erosion control measures. Mineral soil must be exposed so fire will not creep over the line. The exposed soil surface is subject to raindrop splash erosion and overland flow. Ditching to divert water into undisturbed areas will prevent excessive soil movement.

Water quantity is affected more by removal of trees than by slash disposal. The only measurable effect on water yield would occur where large areas of mineral soil are exposed and overland flow increased by a decrease in infiltration rate. Water quality would be affected in the same way (DeByle and Packer, 1972). Overland flow could increase sediment delivery to the streams if a sufficient strip of undisturbed vegetation is not present between the burned unit and the stream (Snyder and others, 1975).

Slash disposal has an effect on fisheries or streams if water quality or quantity is affected. Overland flow from burned units may carry high levels of nutrients which will temporarily enrich the water and add to available fish food. The duration and magnitude of the nutrient flush is so short and small that detection of the result is unlikely (Snyder and others, 1975).

Slash disposal has an effect on big game when cover that remains after logging must be burned during slash disposal. Forage may be temporarily reduced by slash disposal activities, but reduced competition and rapid nutrient release may result in an increase of shrub, grass, and forb growth in the subsequent growing season.

A totally clean forest floor lacks cover for a wide variety of small animals, many of which depend on insects for food. The removal of all dead, down, and decaying material removes a whole segment of the forest ecosystem. Some harmful insects and animals are eliminated, but beneficial ones are also removed. Slash disposal procedures should leave sufficient woody material to support the full complement of organisms present in the forest ecosystem.

Bark beetles and fungi can build up in untreated slash and spread to living trees. Slash treatment reduces the habitat for these insects and diseases and controls their spread (Furniss and Carolin, 1977). Dozer piling in a partial cut can result in mechanical damage to residual trees and increases their susceptibility to disease or insect attack.

Costs of slash disposal vary by disposal method, size of unit, and slope. Handpiling is more expensive than machine piling, small units cost more per acre than larger units, and units on steep slopes are more expensive to treat than those on gentle slopes. The higher the total timber output, the higher the total slash disposal costs. Slash disposal is a necessary cost to the production of timber and, as such, has an effect on the calculation of PNV. The amount of slash disposal required depends on the acres of timber harvested each year; some control will be required on practically every acre. The average annual area burned for slash disposal and timber site preparation purposes is shown in Table IV-17 for the first decade and the projected peak decade within the 40 years subsequent to 1990.

Table IV-17: Average Annual Area Burned for Slash Disposal and Timber Site Preparation (M Acres)

	Alternative							Benchmarks		
	a	b	c	d	e	f	g	RPA RUN	MAX PNV	MIN LVL
First Decade	11.1	9.8	11.8	12.6	13.1	16.8	10.9	11.3	20.7	0
Peak Decade Projection	19.7	20.7	22.3	20.1	24.1	20.6	10.9	25.9	27.6	0

The acreage to be treated for slash disposal and site preparation is also a function of the habitat group harvested and the silvicultural system used. On habitat groups with relatively high timber volumes, the level and intensity of both site preparation and slash disposal are greater than in areas with low timber volumes. An area that is harvested with a clearcut system will usually require a different type of disposal than a similar area harvested with a shelterwood system. Thus the acreage treated by fire for slash disposal and site preparation varies from one alternative to another, but in general, those alternatives with high timber volumes scheduled for harvest will have the highest fire treatment prescribed.

Slash disposal activities create smoke which may degrade air quality enough to cause local short-term problems. Units harvested but unburned may be nearly impassable to animals or people if slash loads are high. The problem is greatest with high timber output alternatives.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Slash control maintains or increases long-term timber/vegetative productivity. Productivity is adversely affected if slash is not treated or treated in a poor manner. There is always a chance for excess soil to be displaced and erosion to occur with machine piling and windrowing. Soil compaction also may result. Fertility is then lost and the next generation of trees suffers. Burning at a time when the fire generates too much heat generally has the same effect. Most other effects of slash control are short-term and have little impact on productivity.

Irreversible and Irretrievable Commitment of Resources - Control of slash on a harvest site does not irreversibly commit this area to slash control in the future. However, one objective of slash control is to promote another generation of trees. Considering the time and effort expended, it is likely this future crop will be harvested and the slash created by that harvest will need to be treated. The soil lost in slash control efforts is irretrievable.

Adverse Effects Which Cannot be Avoided - The most obvious adverse effect is the generation of smoke into the atmosphere by slash control. Though this effect is short lived, the more volume of slash control, the more smoke. Other adverse effects include the short-term scorched and blackened vistas and the displacement of wildlife and possible erosion of soils.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Burning plans need to take into consideration the potential effects smoke drift may have on the Class I airsheds (Flathead Indian Reservation and all wilderness areas).

Energy Requirements - Some energy is required in slash control. If machinery is used, the energy required for a particular site can be significant. A small amount of energy is used in torches to light fires. Handpiling of slash requires little energy outside the muscular activity of those persons doing the piling.

4. Site Preparation

The objective of site preparation is to create micro-sites where tree seedlings have a good chance for survival. Site preparation requires removal of competing vegetation and exposure of mineral soil. The removal of competing vegetation allows for good early seedling growth in full sun and with plenty of soil moisture. Seedlings sprouting on duff or organic layers generally will not survive since the organic matter dries out too fast.

Site preparation is usually accomplished in conjunction with logging and slash disposal activities. Dozers used to skid logs and pile slash displace litter and other organic matter and the result is enough mineral soil exposure to provide planting sites. Cable logging displaces some of the organic layer, and broadcast burning or burning of handpiles creates areas where mineral topsoil is exposed. In units where insufficient mineral soil is exposed or competing vegetation has had time to regenerate, the soil surface must be scarified or the competing vegetation killed just before planting. Scarification can be done by dozers or other machines on gentle slopes, but must be done by hand scalping on steeper slopes. If competing vegetation is too dense, chemical control can be proposed for eliminating this competition. Each site must be analyzed to determine the appropriate method. Use of new technology in methods of scarification will help in achieving optimum results.

Site preparation has the same effect on the visual resource, soils, water quality and quantity, and fish as the soil-disturbing aspect of slash disposal. Hand scalping of the individual tree planting sites is generally the least costly method of site preparation; handpiling and burning is the most expensive. Hand scalping is also least effective because less competing vegetation is removed and seedling failure can be high. Machine scarification, piling, and burning is the most effective method because enough mineral soil is exposed and most competing vegetation is removed. It is possible to "overscarify" and cause damage to the soil and water resource. Retention of prescribed amounts of large woody debris provides good micro-sites for regeneration, helps protect the soil resource, and provides for nutrient cycling.

Environmental effects of site preparation vary by factors other than alternatives, but the higher the timber output, the greater the potential for environmental concern because there will be more site preparation activity.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Timber productivity of sites depends in part on how quickly trees are established after harvest. Adequate site preparation is necessary to ensure seedling survival and to give them a good start to compete with other vegetation. Care must be taken so that the relatively thin topsoils are not removed. These soils are necessary for the maintenance of productivity. Retention of woody residues will help maintain long-term nutrient levels.

Irreversible and Irretrievable Commitment of Resources - Since considerable money and effort are expended in preparing the site for a new generation of trees, it is unlikely that the next generation of trees will not be harvested. Soil lost or displaced by site preparation activities is irretrievable.

Adverse Effects Which Cannot be Avoided - The temporary appearance of piled slash and disturbed soil on sites that have been prepared for regeneration is unavoidable and will remain until revegetation becomes effective in stabilizing soils and providing cover. Soils are displaced but very seldom from the site. If burning is used, smoke is generated. The noise and visual effects of site preparation can affect recreation use for a short time.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - Burning plans need to take into consideration the potential effects smoke drift may have on the Class I airsheds (Flathead Indian Reservation and all wilderness areas).

Energy Requirements - Energy requirements for site preparation are very similar to those for slash control and in many cases are shared.

5. Reforestation

Reforestation occurs on all sites that are prescribed for a regeneration harvest, either by natural or artificial means. In a forested environment, regeneration of nearly all sites will occur naturally given enough time. Some sites will naturally regenerate rapidly (1 to 5 years), others may take up to 25 to 30 years. The longer it takes for a site to regenerate, the more the resultant stand will be composed of climax species, which are more susceptible to insect and disease problems and are less productive than seral species.

Artificial reforestation (planting/direct seeding) is prescribed on those areas where natural regeneration will not occur, to avoid unacceptable timeframes and species, and in areas where previous natural reforestation efforts have failed (see Table IV-18). Planting is usually performed in clearcuts but may also be used in shelterwood or selectively harvested areas where natural regeneration is not occurring. Stands with severe insect or disease problems also may require artificial reforestation.

Table IV-18: Average Annual Reforestation by Decade, Acres per Year

		Alternatives							Benchmark		
	Decade	a	b	c	d	e	f	g	MAX PNV	MIN LEV	RPA RUN
Plan Period	1	15713	13878	16922	4647	5370	4597	7210	5425	0	11569
	3	17372	6512	13375	7317	7742	8853	10781	17253	0	19850
Projections	5	10036	8466	11238	9667	11067	8797	11154	13630	0	11343
	10	9307	7429	8236	7421	8298	7461	8838	8069	0	9367

The amount of planting varies by alternative. As the level of timber management intensity increases, the amount of artificial reforestation increases in order to gain quicker regeneration of seral species. This also results in a faster recovery of the visual character of the landscape; a faster return to preharvest levels of water yield, water quality, and timing of peak flow, and a faster protection of the soils from erosion. Rapid regeneration causes cattle and wildlife transitory forage to decrease at a quicker rate because of shading and competition of the growing trees, but speeds the recovery process of big-game hiding and thermal cover.

Insect and disease problems can be minimized by the establishment of a young, vigorous stand of trees. Often, the problems can be further minimized by planting a different species than was harvested or by planting a mixture of tree species. Monetary returns may be greater with the new generation of trees if higher-valued species are planted, but introduced species must be compatible with the site. Generally, seral species are more insect- and disease-tolerant and vigorous than are climax species.

Planting is labor intensive and costs are high. It is more expensive to plant on slopes over 40 percent, on thin, rocky soil, and in clearcuts because more seedlings are planted per acre. Because of the expense, planting has a definite affect on the calculation of PNV. It is cheaper to plant with fresh site preparation than to try to plant after an initial treatment has failed.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Planting can have a definite effect on productivity of the next generation of trees. Stand establishment takes fewer years than natural regeneration, shortening the time until the next harvest. Other species or a mix of species can be introduced on the site, if compatible, and lessen the loss to insects and diseases, in addition to producing more wood fiber. These activities should not affect the natural productivity of the site and will provide faster protection to the soils. Though rapid growth of timber will reduce the transitory forage available to livestock or big game, it will provide the hiding cover and thermal protection for big game.

Irreversible and Irretrievable Commitment of Resources - Because of the expense of planting, it is reasonable to assume that the next generation of trees will be harvested. For all practical purposes, this is an irreversible commitment. The only irretrievable loss associated with planting would be in cases when the planting fails. The fiber lost during this period of time could not be recovered.

Adverse Effects Which Cannot be Avoided - A percentage of the plantings on the Forest will fail in the first few years. If stocking levels are not adequate, replanting at an additional expense will be required.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Some energy will be required in transportation of tree planting crews to the field and the use of powered equipment for planting. This is a small portion of the total energy use on the Forest.

6. Timber Stand Improvement

Precommercial and commercial thinning are the two activities associated with timber stand improvement. Precommercial thinning occurs when the regenerated stand is about 20 years old (too small for commercial products). Commercial thinning generally occurs when the stand is about 60 years old (some commercial products). The objective of thinning is to reduce competition among crop trees so maximum growth per residual tree is realized. The resulting fewer but larger trees are more valuable at time of harvest.

Thinning can have a minor short-term adverse effect on viewing from the foreground until the slash decays or is otherwise disposed of. Thinned stands have an esthetically pleasing appearance once the slash is gone. The more open aspect of the thinned stands is not likely to be regarded as a negative effect by the casual observer.

The slash created by thinning is a fire hazard that is difficult to manage. Broadcast or underburning is not possible without damage to the remaining trees and burning handpiles can also cause considerable damage.

Thinned stands produce slightly more forage for a short time after thinning but this advantage is soon lost by the rapidly expanding canopy of the remaining trees. Hiding cover for big game may be reduced by thinning but recovers as the remaining trees occupy the available space. A more or less diverse stand can result from thinning, depending on the objectives. Thinning to emphasize one species over a large area is a detriment to diversity and could affect the habitat of certain small animals, birds, and insects. The removal of insect-infested, diseased, and slow-growing trees will result in a more healthy, vigorous stand.

Precommercial thinning results in a decrease in PNV because timber yield tables show very little difference in yields. Species composition may change somewhat due to the treatment. Also, the $75 to $150 per acre investment must be discounted over the rotation length. Quality of the final crop trees and harvest efficiencies associated with larger-sized trees, coupled with shorter rotation periods, help compensate for this investment.

Thinning can have beneficial results by controlling stocking levels below threshold levels for insect attack and may help to sanitize diseased stands, allowing for healthier growing conditions. Thinning allows selected trees to grow faster in diameter allowing for an earlier commercial or final harvest more efficiently. As management intensity increases, the investments in precommercial thinning also increase as displayed in Table IV-19.

Table IV-19: Average Annual Timber Stand Improvement by Decade, Acres per Year

		Alternatives							Benchmark		
	Decade	a	b	c	d	e	f	g	MAX PNV	MIN LEV	RPA RUN
Plan Period	1	3998	3239	4659	773	1427	1493	923	2025	0	2476
	3	3998	3239	4659	773	1427	1493	923	4103	0	2476
Projections	5	4618	5198	10451	819	1127	2931	3909	6919	0	5871
	10	2252	3408	7095	744	923	6744	5072	125	0	2976

Commercial thinning has the same environmental effects as selection harvest.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Thinning increases the productivity of wood fiber. One objective of thinning is that the final product be more useful and valuable.

Irreversible and Irretrievable Commitment of Resources - Thinning is costly and adds to the commitment to continue intensive management practices and final harvest. In only unique situations would final harvest not occur. Some of the funds expended in this costly process may not be completely retrievable.

Adverse Effects Which Cannot be Avoided - Temporary losses of hiding cover will affect big game use of the areas. The visual resource will be adversely affected for a short period of time. The slash created by thinning will likely not be treated. This will present a fire hazard for a few years after thinning.

Conflicts with the Objectives of Other Land Management Plans, Policies, and Controls - None identified.

Energy Requirements - Most of the energy used in precommercial thinning will be used in transportation of crews to the sites and use of powered equipment for thinning. This is a small portion of the total Forest use.

O. Roads

1. Road Construction

Road construction and maintenance have a greater effect on other resources than any other Forest management activity. The primary effects are the displacement of large amounts of soil, increased vehicle access, and decreased visual resource.

About 5,440 miles of inventoried system roads, which are considered necessary for resource management activities, exist on or adjacent to the Forest. Of the 5,440 miles, about 420 miles are classed as Forest arterials, 3,000 miles as Forest collectors, and about 2,020 miles as local roads. Besides these inventoried road miles, about 1,800 miles of old logging spur-type roadways exist. These roads were built originally as "temporary" facilities, but half of these roads appear to have some value for future resource access and utilization needs.

Table IV-20 projects the miles of road to be constructed by alternative for the next 50 years. Mileages include roads outside the Forest boundary which provide access to the Forest. Most local roads will be closed and stabilized. The mileage of open and maintained road at any one time will be much less than the total miles of road constructed.

Table IV-20: Average Annual Road Construction By Decade (Miles)

Alternative		Time Period	Construction	
			Local Roads	Collector Roads
	Plan Period	1981-1990	108	64
a		1991-2000	138	29
		2001-2010	138	--
	Projections	2011-2020	13	--
		2021-2030	61	--
	Plan Period	1981-1990	125	36
b		1991-2000	99	49
		2001-2010	140	--
	Projections	2011-2020	81	--
		2021-2030	69	--
	Plan Period	1981-1990	99	67
c		1991-2000	125	26
		2001-2010	101	--
	Projections	2011-2020	128	--
		2021-2030	72	--
	Plan Period	1981-1990	75	65
d		1991-2000	107	21
	Projections	2001-2010	101	--
		2011-2020	113	--
		2021-2030	46	--

Table IV-20 (continued)

Alternative		Time Period	Construction	
			Local Roads	Collector Roads
e	Plan Period	1981-1990	52	89
	Projections	1991-2000	83	48
		2001-2010	178	--
		2011-2020	168	--
		2021-2030	38	--
f	Plan Period	1981-1990	78	49
	Projections	1991-2000	102	24
		2001-2010	140	--
		2011-2020	122	--
		2021-2030	70	--
g	Plan Period	1981-1990	107	--
	Projections	1991-2000	99	--
		2001-2010	155	--
		2011-2020	95	--
		2021-2030	72	--
Benchmark	MAX PNV	1981-1990	96	102
		1991-2000	94	55
		2001-2010	156	--
		2011-2020	42	--
		2021-2030	---	--
	RPA RUN	1981-1990	63	63
		1991-2000	117	39
		2001-2010	102	--
		2011-2020	46	--
		2021-2030	73	--
	MIN LVL	-0- All Time Periods		

Roads provide access for motorized recreation, but eliminate primitive recreation and severely modify semiprimitive recreation. Wilderness attributes of roadless areas are foregone. People will either shift their recreation use to another roadless area or continue to use the same area and experience a change in the type of recreation available.

People who prefer roaded recreation will find greater opportunities for this type of recreation.

Road construction can affect the basic character of the landscape by changing its color, texture, or line. Roads across open areas on steep slopes are highly visible for many miles. Cuts and fills are often visible even through a screen of vegetation. Where the visual resource is important, the impact can be reduced by leaving vegetative screens, seeding, treating cut and fill slopes with a darkening agent or reducing cuts and fills by changing road designs. The transportation system necessary to implement any alternative would result in an adverse, though not unacceptable, visual effect according to visual quality standards (USDA Forest Service, 1977).

Road construction can result in adverse effects on cultural resources (see page IV-22); however roads built for timber hauling can also facilitate exploration and development of locatable and leasable minerals.

Road construction can provide an excellent seedbed for invader plant species including noxious weeds. Once established these plants provide a seed bank for escape into the surrounding plant communities. Noxious weeds, however, are spreading even without road construction and not building roads will not stop their spread. Recent studies of the relation of noxious weeds to road seedbed conditions suggest a number of management practices which can reduce or eliminate this risk. Additional information is provided in Section M, Chapter IV.

Roads often cross game trails and may change animal movement patterns. Linear openings are cut through animal cover, and the security of an area is reduced by increased road access. Narrow roads built to follow the terrain with minimum cuts and fills reduce these impacts. Road closures can restore the security for big-game animals to acceptable levels even though the road provides a travelway for horseback riders and hikers.

Road construction on big-game winter range causes few problems to the animals because construction activity normally occurs when few or no animals are present. These roads, however, do provide easier access for hunters.

Road construction activity on big-game summer range displaces the animals. The displacement is usually beyond a topographic barrier (Lyon, 1979) and will continue as long as heavy traffic is allowed. Road building in adjacent drainages can be scheduled to avoid simultaneous activity so displacement will be minimized. New roads increase the access for both hunters and other recreationists. Parts of the habitat for some small animals will be destroyed by road construction but other habitat may be created for those animals who exist along the edge of the forest.

Road construction and maintenance produce the greatest impacts of any activity on soil, water, and fisheries through erosion and sedimentation. Sediment can fill the spaces between gravels, smothering fish eggs, small fish, and fish food. Fry and fingerlings lose hiding cover and are more vulnerable to predators. In addition, roads tend to concentrate water runoff, further increasing surface erosion and sediment buildup in streams. Roads can behave like first-order drainages. They can intercept flow and can be efficient in carrying water to a stream channel thus increasing peak flows. Roads with deep cuts through the soil mantle can interrupt the subsurface flow of water and increase the mass failure hazard in unstable soil types.

Because roads contribute approximately 80 percent of the erosion and sedimentation attributed to land management activities (Megaham and Kidd, 1972), roads that are constructed through or adjacent to riparian areas may adversely affect stream channel stability, water quality, and fishery habitat. For this reason, in all alternatives road building and timber harvest activities are constrained to minimize effects on the stream environment. Culvert placement and bridge building, for example, cannot take place at those times when fish are spawning or when the redds are vulnerable to sediment increases, and roads will be designed to cross rather than parallel riparian areas.

Roads also can expose selected stream reaches to overfishing due to easier public access. Stream crossings can interrupt fish migration if the structure(s) is improperly designed or installed.

As noted in Section F, Aquatic Environment/Fisheries Habitat Improvement/Water Uses, sediment yield predictions on the Lolo Forest are Forest-wide estimates and lack precision for making individual stream evaluations. However, Table IV-21 displays relative levels of anticipated sediment yield produced in third-order watersheds on the Forest. High (H), Medium (M), and Low (L) values have been assigned to express sedimentation rate increases above the natural background sediment. There is a close correlation between these ratings and the amount of road construction by alternative. There is also a close correlation between these ratings and the amount of management activity portrayed by alternative in Table II-33. These rankings reflect the risk of possible sediment impacts on fish, the risk being that sediment would adversely affect fish populations. These ratings do not include impacts from temporary roads that will be closed and reclaimed after use. Mass wasting is not reflected because road-related mass failures are not significant on the Forest.

Table IV-21: Relative Sediment Yield Potential in Third Order Watersheds

	Alternative							Benchmark		
	a	b	c	d	e	f	g	MAX PNV	RDA RUN	MIN LEV
Potential Sediment	H	M	H	M	M	M	L	H	M	L

H = High, M = Moderate, L = Low

In all alternatives, road building and timber harvest activities are constrained to minimize effects on the stream environment. Forest-wide mitigation measures are applied by standards to all road construction activities to reduce the sediment delivered to streams.

Every mile of road construction disturbs the soil on four to eight acres between the top of the cut and the bottom of the fill slope. This area can be considered a clearcut with special revegetation problems. No trees will grow on the road surface, but will grow on some portions of the cut and fill slopes. There will be a reduction in productivity along the sides of roads across steep slopes, but no yield table reductions were made because the loss is insignificant (Pfister and others, 1977).

Roads built into roadless areas result in increased access and increased potential for man-caused fires. However, this same access makes fire suppression easier by quick delivery of fire fighters and provides fuel breaks for fire.

Road construction is a major cost in all alternatives. While road costs initially reduce returns to the U.S. Treasury, later timber harvests generate increased income since roads can be used for multiple harvest entries over an extended period. A significant benefit to the local economy comes from local contractors who build many of the Forest roads.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Construction of roads has a long-term effect on productivity. Even though efforts are made to vegetate a road, the road bed and cut/fill slopes will not maintain the preconstruction productivity potential. If the roads remain open to use, this acreage is removed from the vegetative production capacity of the area. Roads remove the habitat of small animals and birds even though the edge of roads may create habitat for others. Roads facilitate timber harvest which can have a positive effect on future productivity of the area. Roads change the type of recreation experience which can be enjoyed in the area. Actively traveled roads can have an adverse effect on the movement of big-game animals. Roads have the potential to create severe and long-lasting impact on the visual resource.

Irreversible and Irretrievable Commitment of Resources - Road construction is an irreversible commitment of resources since roads are essentially permanent features of the landscape. If roads are not constructed to allow for the economical harvest of timber, then the value of the timber resource cannot be recovered and is lost. If roads are built, irretrievable losses occur in wilderness potential, primitive and semiprimitive recreation, and roadless wildlife habitat.

Adverse Effects Which Cannot Be Avoided - Roads reduce the natural appearance of landscapes. Wildlife habitat and wildlife movement patterns are disturbed. Roadless recreation opportunities are lost. Wilderness potential is foregone. Road construction and maintenance cause the greatest amount of soil disturbance and erosion. Water quality of streams may be lowered by road building and fish habitat may be destroyed or lowered.

Conflicts with the Objectives of Other Land Mangement Plans, Policies, and Controls - The Forest works closely with other landowners to efficiently develop access required to manage the land.

Energy Requirements - With the exception of timber harvest, road construction and maintenance requires the largest amount of energy use of any other Forest activity.

The following table exhibits the average annual energy requirements projected for road construction on the Forest by alternative for the next 50 years.

Table IV-22: Energy Requirements for Road Construction

	Alternative							Benchmark		
	a	b	c	d	e	f	g	MAX PNV	RPA RUN	MIN LEV
Average Annual Energy Use (billions of BTU's)	76	74	91	78	83	85	88	87	77	0

2. Road Management

The objective of road management is to provide for public and commercial use of the road system while reducing adverse impacts on forest resources.

Road management consists of road closures, use restrictions, and maintenance. Road closures are made for one or more of the following reasons:

a. Protection of Wildlife Habitat - Many closures are made to protect habitat of big game, threatened or endangered species. Closures may be seasonal based on habitat use. Closures may also be made to reduce hunting pressure. The Montana Department of Fish, Wildlife, and Parks is a cooperator in this effort.

b. Water Quality and Erosion Control - Roads may be closed when the road surface is very soft and wet to prevent rutting. This reduces erosion and the amount of sediment reaching streams.

c. Reduction of Maintenance Costs - Reduction or elimination of road use, especially when the surface is wet, can substantially reduce maintenance costs.

d. Public Safety - Some types of traffic may be prohibited at certain times for user safety.

Seasonal or year-round road closures can be used to provide a wide variety of recreational opportunities, even though the environment is changed by the physical presence of the road.

Table IV-23: Projected Road Access at the End of Decade 12

Alternative	Collector Roads Needed (Miles)	Collector Roads Open for Public Use (Miles)	Local Roads (Miles)
a	3925	2208	9250
b	3405	1500	7164
c	3925	1850	8667
d	3852	1883	7257
e	4371	1584	7217
f	3727	1425	7136
g	2996	1750	8112
Benchmark			
MAX PNV	4567	1440	5901
MIN LEV	-0-	1650*	-0-
RPA RUN	4013	1650	7009

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* This mileage will gradually decrease over time as weathering and revegetation occurs.

Under most alternatives, the miles of open road increases slightly over time, but the majority of new roads constructed will be closed to public use. During the first decade, the mileage of open roads will remain almost unchanged. Most all roads constructed will have year-round or seasonal closures, except where closing is impractical or costs of closing are greater than the benefits.

Road closures or restrictions in most cases are applied against motorized access by the public, plus administrative travel by Forest managers. Closures will have a positive effect upon wildlife species sensitive to human activities such as elk and grizzly bear. Road closures reduce the disturbance of their habitat (Lyon, 1979) and therefore, increase their usability of areas. These closures are essential in achieving the Forest's objectives for elk and grizzly bear.

Road closures will reduce the opportunity for firewood gathering in specific areas at certain times of the year. However, where firewood exists and there is demand for it, roads will be opened selectively for short periods for firewood gathering.

Road closures reduce road-oriented recreation opportunities. However, there is no significant effect on energy use.

Road status (open or closed) will be reviewed and revised approximately every 3 years with full public involvement when changes are being considered.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - Some roaded recreation opportunities are lost but wildlife habitat is enhanced.

Irreversible and Irretrievable Commitment of Resources - None identified.

Adverse Effects That Cannot be Avoided - Some people do not agree with current and planned road closures. Some can be adversely affected by a closed road which they prefer to be open, and others if the road is open and they prefer it closed. Commercial interests may incur additional costs due to road closures or use restrictions. Recurrent maintenance costs will result from roads left open to use.

Conflicts with Objectives of Other Land Management Plans and Controls - None identified.

Energy Requirements - No significant requirements.

P. Research Natural Areas

The six selected areas proposed as Research Natural Areas comprise a total of 3,307 acres. The purpose of the RNA's is to reserve undisturbed ecosystems for future observation and study. The same six areas were proposed for all alternatives. The 1,430 acres of suitable timber land included in the proposed RNA's could produce an estimated 100,000 board feet per year if they were assigned to management areas with regulated timber harvest. Because of the small acreage involved, other resource impacts are minimal, especially since the purpose of the RNA prescription is to maintain areas in a natural state for research purposes. In addition, much of the area is at high elevation which is unsuitable for both timber and livestock forage.

Short-term Use vs. Maintenance and Enhancement of Long-term Productivity - The few research projects designed for these areas will have minimal resource impacts with no impact on long-term productivity.

Irreversible and Irretrievable Commitment of Resources - Timber products, livestock forage, and minerals are irretrievably lost as long as the areas remain in RNA status.

Adverse Effects Which Cannot be Avoided - Control of insects, diseases, and noxious weeds is generally restricted or extremely costly because of the techniques required to protect the natural condition of the area.

Conflicts with the Objectives of Other Land Management Plans, Policies and Controls - No conflicts with other land management plans are anticipated.

Energy Requirements - Energy requirements associated with managing the Research Natural Areas are expected to be an insignificant portion of total Forest use.

CHAPTER V - LIST OF PREPARERS

[illegible]

[illegible] - [illegible]

[illegible] years [illegible] Forest Service [illegible] Supervisor's Office, and Regional Office [illegible] planning and management and long-range planning. [illegible]

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[illegible] - [illegible]

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Conflicts with the Objectives of Other Land Management Plans, Policies and Controls - No conflicts with other land management plans are anticipated.

Energy Requirements - Energy requirements associated with managing the Research Natural Areas are expected to be an insignificant portion of total Forest use.

CHAPTER V - LIST OF PREPARERS

Program Officer, Planning

Robert "Bob" Meuchel - Supervisory Forester; B.S. Forestry

Twenty-one years professional Forest Service experience on Ranger District, Supervisor Office, and Regional Office levels as District Ranger, in timber planning and management and long-range planning. Responsible for long-range planning on the Lolo National Forest.

Responsible for completion of the Lolo Forest Plan including EIS preparation.

Interdisciplinary Team

Core Group

B. John "Jack" Losensky - Planning Team Leader and Forest Ecologist; B.S. Forest Management; M.S. Forest Ecology

Nine years general forest management; 3 years with Forest Service Research conducting fire effects studies on forest communities throughout the U.S.; 3 years experience as biotic planning specialist and interdisciplinary team leader in project and long-range planning; 7 years as interdisciplinary planner for long-range planning.

Provided leadership and expertise in the development of all planning actions and procedures required by the NFMA; had overall responsibility for interdisciplinary team functioning and participation; established necessary communications between the planning team and Lolo Forest management personnel; developed procedures for assessing diversity.

Fred Stewart - Forest Economist; B.S. Wildlife Biology; Ph.D. Resource Economics

Graduate level course work in economics; member of planning staff for USDA Cooperative River Basin Studies in North and South Carolina with reponsibility for preparing the economic sections.

Seven years experience as forest economist.

Developed cost coefficients for management prescriptions; assisted in the development and use of demand and supply analyses used in formulating and evaluating alternatives; analyzed economic impacts of alternatives using input-output modeling and other techniques. Coordinated preparation of final E.I.S.

Greg Munther - Fisheries Biologist; B.S. Forestry; M.S. Fisheries Management

Seventeen years Forest Service experience with staff responsibilities in timber management, information and education, and fisheries management; interdisciplinary team member of the Sawtooth National Recreation Area planning team.

Served as biological sciences representative on the planning team; provided technical expertise in the development of riparian management activities and coefficients for expressing the effects of management activities on aquatic habitats and fisheries; developed the procedure for addressing monitoring requirements; participated in assessing alternatives for geographic, biological and philosophical reasonableness.

Arne "Skip" Rosquist - Hydrologist; B.S. Aerospace Engineering; M.S. Watershed Science

Served 6 years as an aerospace engineer with the United States Air Force; 2 years experience as an environmental scientist, Atomic Energy Commission; 10 years with the Forest Service with responsibilities in watershed management.

Served as physical sciences representative on the planning team; had principal responsibility for the development of watershed management considerations and coefficients for all management activities; coordinated activities required to assess alternatives for implementation feasibility.

Virginia "Ginny" Tribe - Public Information Officer; B.S. Secondary Education

Public information and training and education specialist for 4 years with the Bureau of Land Management; post graduate training in environmental analysis procedures, planning systems, communications, environmental politics, and public involvement in resource management.

Developed public information materials related to Forest planning; developed, implemented, and facilitated public participation activities; participated in assessing and evaluating alternatives for their social responsiveness; organized and drafted this Forest Plan EIS.

John C. "Jack" Fisher - Planner; B.S. Forestry

Twenty-seven years Forest Service experience in various aspects of management and planning. Forest liasion to Bonneville Power Administration during construction of the Dworshak-Hot Springs 500-kv transmission line; member of Colstrip Interagency Study Team; technical representative to the Bureau of land Management's Northern Tier Pipeline environmental study team; member of interagency EIS team. Garrison-Spokane 500-kv transmission project; and Forest Service Project Coordinator for construction of BPA's Garrision Spokane 500-kv transmission project.

Participated in FS interdisciplinary team in evaluating Lolo Forest Plan alternatives and defined management activities related to power and pipe line corridors; responsible for identifying and qualifying energy-related effects and consequences; organized and drafted the Lolo National Forest Plan Revised Environmental Impact Statement and Forest Plan (1982); responsible for editing the Final Environmental Impact Statement.

Defined the management activities related to powerline/pipeline corridor construction; participated on the interdisciplinary team in the evaluation of alternatives according to their energy-related effects and consequences.

Analysis Support Group

Mike Hillis - Wildlife Biologist; B.S. Wildlife Science

Two years experience as a forestry technician; 13 years experience as a wildlife biologist in the Pacific Northwest and Northern Regions.

Principal responsibility for developing wildlife management activities and coefficients for measuring the effects of management activities on all major species groups of animals represented on the Forest; participated in reviewing and evaluating alternatives for biological feasibility.

W. Jerry Deibert - Wildlife Biologist, West Zone; B.S. Wildlife Management; M.S. Range Science

Seventeen years professional experience as a wildlife biologist for the Forest Service in the Pacific Northwest and Northern Regions.

Participated in the development of coefficients for nongame wildlife species; as a member of the interdisciplinary team, participated in all phases of alternative development and evaluation.

Richard "Dick" Seitz - Budget and Accounting Officer; B.S. Business Administration (Accounting)

Seventeen years Forest Service experience with responsibilities in budget preparation, implementation, and accounting.

Provided cost and output data for selected resource activities; provided the economist with budget data and information; assisted in testing financial data used in alternative development.

C. Milo McLeod - Cultural Resources Specialist; B.A. University Studies; M.A. Anthropology

Fifteen years field and technical experience in archeological and historic surveys, studies, and management guidance.

Prepared the Forest's cultural resources overview and proposals for cultural resource assessments in Welcome Creek and the Scapegoat Wildernesses; participated as a member of the interdisciplinary team to define the cultural resource management activities.

Ronald L. Yates - Landscape Architect; B.S. Fisheries Science; B.A. Landscape Architecture

Four years experience as a landscape architect prior to current position on the Lolo Forest.

Participated on the interdisciplinary team in evaluating alternatives for implementation feasibility.

Kenn Frye - Mining Engineer; B.S. Geology; M.S. Economic Geology

Served 2 years in Rock Springs, Wyoming, as an Area Geologist with the BLM and 3 years as the District Geologist for the BLM Salt Lake District; served 4 years as the Lolo Forest Mining Engineer.

Participated on the interdisciplinary team and developed the oil and gas leasing evaluation and procedure; provided geologic information for the analysis of the management situation; assisted in writing Appendix C.

Allen L. Christophersen - Forester; Silviculturist; B.S. Forestry, M.S. Forest Science - Silviculture

Eleven years professional experience in timber sale preparation, post sale treatment forester, District silviculturist, and silvicultural program responsibilities on the Lolo National Forest.

Participated in the development of timber management coefficients and provided timber management cost information. Participated in alternative evaluations.

Gary E. Johnson - Lands Specialist; B.S. Forestry

Twenty years Forest Service experience, with 11 years administrative responsibilities in lands and minerals.

Participated as a member of the interdisciplinary team with primary responsibility for updating the land adjustment proposal and providing land use implications to the team.

David Wear - Operations Research Analyst; B.A. Botany, M.S. Resource Systems Science

Five years experience with the application of quantitative methods and systems analysis and design to forest management and planning. Research assistant: Duke University/USDA Integrated Pest Management Program and the University of Montana.

Provided technical expertise in the reformulation and use of the forest planning model.

Technical Support Team

Olleke Rappe - Program/Statistical Assistant

Assisted with the compilation of data used in the planning process, its organization and transmittal to the computer section, and its use in displaying working maps of alternative allocations.

Carol Stevens - Illustrator

Provided illustrations, graphics, and visual aids for Forest planning brochures and public workshops; developed the design and layout for the Forest Plan EIS and Forest Plan document. Also designed and sketched the covers for the FEIS and Forest Plan.

Margaret "Marge" Johnson - Computer Specialist

Assisted in the development of the Forest Plan data base, reports of capability and analysis areas, and modeling procedures.

Mae L. Murphy - Computer Technician

Entered and edited raw data; assisted in the entry and editing of Forest mathematical model data.

Linda Benton - Support Services Supervisor

Responsible for final review and format consistency of the Forest Plan EIS.

Donna Gastineau - Secretary

Assisted in day-to-day support in the revised draft.

Nancy "Nanka" McMurray - Forestry Technician

Assisted in day-to-day support and compilation of planning data and maps displaying alternative management emphasis.

Barbara Beauchan - Carto Aid/Data Transcriber

Assisted in typing, entering data, table preparation, and format editing.

Lorna McNay - Clerk-Typist

Responsible for final typing and editing, and assisted in format consistency.

Vicki Bennett - Editorial Assistant

Responsible for writing, proofing, and format consistency of portions of the Forest Plan EIS.

Meg Henderson - Editorial Assistant

Assisted with preparation of maps displaying management emphasis and with writing, proofing and format consistency of portions of the Final EIS.

Patricia McLean - Forester

Assisted in writing, proofing, and format consistency of portions of the Final EIS.

Marcia Hogan - Forester

Assisted in writing and proofing of portions of the Final EIS.

Preparers Associated With Previous Drafts

Thomas W. Stuart	Operations Research Analyst
M. Kent Nelson	Forester/Planner
Rita P. Thompson	Technical Publications Writer-Editor
Margaret Shannon	Natural Resource Sociologist
James H. Cross	Game Biologist
Tom J. Sheehy	Soils Scientist
Robert L. Krepps	Resource Forester
Richard L. Carter	Lands Specialist
Charles Fudge	Timber Management Specialist
Wes Kellie	Forester/Silviculturist
Joel Marshik	Logging Systems Specialist
Richard L. Barnes	Landscape Architect
Edward Vukelich	Geologist
Raymond Wallace	Mining Engineer
James Rice	Civil Engineer
Thomas Lowry	Cartographic Aid
Kay Zillich	Hydrologist
Carol Anderson	Geologist
Bill Gastineau	Computer Specialist
K. Norman Johnson	Assoc. Professor, Utah State University
Daniel B. Jones	Operations Research Analyst
Bob Boller	Computer Specialist
Ralph E. Williams	Plant Pathologist
Mark McGregor	Entomologist
Jane Schmoyer-Weber	Recreation Technician
Linda Kildow	Clerk-Typist
Carol McClue	Clerk-Typist
Charles Tribe	Supervisory Forester
Robert "Bob" Willis	Planning and Operations Engineer
Homer R. Bowles	Recreation/Range/Wilderness Specialist
Robert "Bob" Mutch	Fire Staff Officer
Garry Routledge	Operations Research Analyst
Dwight Chambers	Timber Planner
Sheryl L. Pileggi	Computer Technician
Carol L. Sibert	Support Services Supervisor
Julie L. Smith	Supervisory Clerk
Pat Corts	Writer-Editor
Mary Ann Bartsch	Cartographic Aid

CHAPTER VI - CONSULTATION WITH OTHERS

A. Introduction

This chapter discusses efforts to involve and consult with a variety of publics during formulation of the Forest Plan and Final Environmental Impact Statement (FEIS). It also lists, and responds to comments received during the public comment period for the proposed Plan and Draft EIS.

The [illegible] Forest has conducted an active public involvement program throughout the Forest planning process. Federal, State, and local government agencies have been informed and consulted. Individual people and interest groups have also had an opportunity to participate.

Section B of this chapter, Summary of Public Participation Activities, summarizes public participation and highlights the points at which public involvement was formally sought and the information [illegible] from these opportunities.

Section C, Coordination with Other Federal, State, and Local Agencies, and Indian Tribes, discusses how the Forest [illegible] coordination requirements [illegible] in the National Forest Management Act regulations.

Section D is a Summary of [illegible] with the [illegible] Planning Act.

Section E is a Summary of [illegible] Environmental Impact Statement and Recommended Forest Plan.

Section F is the List of [illegible] Environmental Impact Statement and [illegible]

B. Summary of Public Participation Activities

The following summary of public participation highlights the points at which public involvement was formally sought and the information resulting from these opportunities.

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Preparers Associated With Previous Drafts

Thomas W. Stuart	Operations Research Analyst
M. Kent Solem	Forester/Planner
Rita P. Thompson	Technical Publications Writer-Editor
Margaret Shannon	Natural Resource Sociologist
James H. Cronk	Game Biologist
Tom J. Sheehy	Soils Scientist
Robert L. Kreppe	Resource Forester
Richard L. Carter	Lands Specialist
Charles Fudge	Timber Management Specialist
Max Kettle	Forester/Silviculturist
Noel Marchi	Logging Systems Specialist
Richard L. Barnes	Landscape Architect
Edward Vasilik	Geologist
Raymond Wallace	Mining Engineer
James Ross	Civil Engineer
Thomas Lowry	Cartographic Aid
Jay Killion	Hydrologist
Carol Anderson	Geologist
Bill Casalegno	Computer Specialist
[illegible]	Assoc. Professor, West Virginia University
[illegible]	Operations Research Analyst
Tom Wilson	Computer Technician
Ralph E. Williams	Range Conservationist
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
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[illegible]	[illegible]

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A. Introduction

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The Lolo Forest has conducted an active public involvement program throughout the Forest planning process. Federal, State, and local government agencies have been informed and consulted. Individual Forest users and interest groups have also had an opportunity to participate.

Section B of this chapter, Summary of Public Participation Activities, summarizes public participation and highlights the points at which public involvement was formally conducted and the products resulting from these consultations.

Section C, Coordination with Other Agencies, Governments, and Indian Tribes, discusses how the Forest fulfilled coordination requirements and objectives in the National Forest Management Act regulations.

Section D is a Summary of Procedures to Comply with the American Indian Religious Freedom Act.

Section E is a Summary of Comments Received on the Draft Environmental Impact Statements and the Proposed Forest Plan.

Section F is the List of Respondents to the Second Revised Draft Environmental Impact Statement and Proposed Forest Plan, followed by the Comments to Second Revised Draft Environmental Impact Statement and Proposed Forest Plan, and Forest Service Responses.

B. Summary of Public Participation Activities

The following summary of public participation highlights the points at which public involvement was formally conducted and the products resulting from these consultations.

Draft EIS

QUESTION TO RESOLVE	PUBLIC INVOLVEMENT	PRODUCTS
What public concerns exist about Forest management activities?	Issue Identification Workshops and Mailers	Issues (Definitions of Forest resource management problems based on Commenters' values and realities)
What Forest management activities and effects impact people's lives?	Issue Identification Workshops and Mailers; Social Assessment Mail-Mailers	Social Variables (Effects of management as viewed through Commenters' personal values and realities)

QUESTION TO RESOLVE	PUBLIC INVOLVEMENT	PRODUCTS
What public values and realities define the Forest in different ways?	Alternative Development Workshops; PUBLIC (a computerized program used to determine people's attitudes about Forest resources and how they should be emphasized).	Alternative Philosophies (Sets of comments representing like value bases describing Forest management activities.)
How are sets of public values and realities about Forest management activities translated into outputs?	Alternative Development Workshops; Social Assessment.	Social Criteria (Social variables as defined through alternative philosophies.)
What outputs best represent alternative philosophies?	Alternative Development Workshops	Alternatives (Constraints based on economic and environmental criteria and varying alternative philosophies applied to land base and available resources to achieve optimum solutions.)
What common ground esists among alternative philosophies?	all of the above.	Proposed Action (Alternative that best met evaluation criteria discussed in the DEIS and shown as the Proposed Lolo Forest Plan.)
What deficiencies exist in the draft package?	Response Forms; Informational Open Houses	Decision (Issue a revised DEIS.)
Second Draft EIS		
What new public concerns exist about Forest management activities that should be addressed in the second Draft?	Review of first Draft EIS and Forest Plan; mailer explaining reasons for the second Draft and requesting additional concerns.	Two additional issues.
What deficiencies exist in the second Draft package?	Review of the second Draft EIS and Forest Plan; response forms.	Decision (Issue a second revised DEIS.)

QUESTION TO RESOLVE	PUBLIC INVOLVEMENT	PRODUCTS
Third Draft EIS		
What new public concerns exist about Forest management activities that should be addressed in the third Draft?	Issue Identification mailers addressing Wilderness in particular.	Two additional issues.
What outputs best represent alternative scenarios considering the new issues?	Issue Identification mailers addressing Wilderness.	Three additional Alternatives.
What deficiencies exist in the third Draft package?	Review of the third Draft EIS and Forest Plan; response forms.	Final EIS and Lolo Forest Plan; Record of Decision

Within the broad framework of Forest planning, public input is one of five considerations in the decision-making process. Forest Service decisions are based on five factors: 1) the law, 2) technical information, 3) resource capability, 4) professional judgement, and 5) public input.

In accord with 40 CFR 1503.4, the comments about the proposed Plan or Draft EIS were treated in the following ways:

1. Comments offering technical corrections or pointing out inconsistencies have been used to revised the final documents.

2. Comments requesting clarification or comments resulting from misunderstanding of what was meant in the documents indicate areas where the proposed Plan or EIS needed clarification. Corrections were made, or the reason a correction was not made is explained in the response to the comment.

3. Another type of comment questioned some part of the analysis. In some cases the analysis was clarified, supplemented, or modified. Where further analysis was not done, the reason was explained in the response to the comment.

4. A majority of comments suggested changes in the proposed Forest Plan direction, outputs, and land use assignments. These comments expressing a differing preference for Forest Service management required careful consideration both from an individual standpoint as well as a collective one. Where feasible and appropriate, management area direction in specific areas was changed in response to comments. However, some comments requesting changes in the proposed Plan did not result in any change. Responses to individual comments are contained in this chapter.

The Forest Service use of public comments is documented throughout the Final EIS and Forest Plan. A summary of this documentation is as follows:

1. The Forest Service responses to individual public comments are displayed in this Chapter, along with agencies, elected officials, and Indian Tribe comments.

2. A summary of substantial changes between the Draft and Final statement is given in Chapter I. In Chapter II (Alternatives) and IV (Environmental Consequences), changes are summarized at the beginning of each chapter. A summary of changes to the affected environment, Chapter III, is discussed in the Introduction.

3. The consideration of comments collectively are addressed in this Chapter and Chapter I. In this Chapter, a summary of public comments are discussed by major resource categories. In Chapter I, public comments are also summarized by the Forest issues, concerns, and opportunities.

C. Coordination with Other Agencies, Governments, and Indian Tribes

The NFMA regulations (36 CFR 219.8) outline coordination requirements, objectives of which ensure:

-- recognition of the objectives of other Federal, State, and local governments and owners of intermingled and adjacent private lands as expressed in their plans and policies;

-- an assessment of the interrelated impacts of these plans and policies;

-- a determination of how the Forest Plan should deal with identified impacts;

-- consideration of alternative ways of resolving any identified impacts.

To fulfill this requirement, the team contacted county, State, Federal, and local agencies engaged in planning, and the Flathead Indian Reservation, and requested copeis of their plans for review. The team documented its review of 15 plans received, indicating objectives and policies stated, and prepared a list of items for evaluation. The only potential conflict between other plans' objectives and those of the Forest involved a proposal for a reservoir in the Rattlesnake drainage, included in the Clark Fork of the Columbia River Basin - Cooperative Study. The team considers construction of such a reservoir undesirable since it would effect a major change in current use patterns and would not be compatible with maintaining the visual character of the area. Further, there has been no public expression of need or demand for a reservoir in the Rattlesnake.

36 CFR 219.8 (g) requires the Forest to notify and coordinate planning activities with owners of lands that are intermingled with, or dependent for access upon, National Forest lands. Known landowners in these categories are on the Forest Plan mailing list. Additionally, however, the team prepared a news release and legal notice, and sent letters to major adjacent and intermingled landowners requesting their participation during planning. District managers from one major landowner were the only respondents. The team concluded that concerns expressed duplicated earlier public comments and

were already included in the public issues and management concerns being addressed in the Forest planning process.

The Forest Supervisor sent a notice of intent to prepare the Forest Plan, along with the general schedule of planning actions, to the State Clearinghouse (OMB Circular A-95), affected Indian tribes, other Federal agencies, and Commissioners for the nine counties in the planning area. The Forest Supervisor personally contacted theTribal Chairman for the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation. On the Tribal Chairman's request, further coordination was conducted through the Bureau of Indian Affairs. Letters were sent to other agencies, State bureaus, and County Commissioners. At their request, team members met with interested individuals and groups. Meetings followed a standard flrmat that included an overview of the planning process, disucssion of areas of common interest, coordination needs perceived by both parites, other agencies' plans, and Forest public issues and management concerns. A followup letter was sent after each meeting stating general areas of concern and coordination needs. In several cases, additional meetings were held to further define information flow needs. An amendment to the study plan and an up-date of the planning coordination with other public entities and Indian tribes were prepared for the first Revised DEIS and proposed Forest Plan. Other agency review occurred as part of the 3-month public review period following publication of each DEIS.

Members of the Forest's interdisciplinary team met informally with personnel from area universities to discuss technical aspects of procedures developed throughout the planning process and to identify research needs (36 CFR 219.8(h)).

The monitoring plan in the accompanying Proposed Forest Plan provides for continuing evaluation of the effects of proposed Forest management on lands, resources, and communities adjacent to or near the Forest regardless of ownership (36 CFR 219.8(i)).

D. Summary of Procedures to Comply with the American Indian Religious Freedom Act

Team members met with members of the Flathead Cultural Committee, and with members of the Kootenai Cultural Committee of the Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation. Flathead Cultural Committee members identified areas and sites important to their people, and indicated some sites on Forest maps. These maps were used by the interdisciplinary team during the alternative development process as described in Chapter II. Members of the Kootenai Cultural Committee did not wish to identify specific sites and areas with religious significance, considering it a sacrilege to do so. They indicated a preference to review the EIS and Forest Plan, at which time they will comment specifically on any site or area that appears to be jeopardized by proposed management actions.

Documents recording meetings, correspondence, contacts, and other coordination activities are in the planning records at the Supervisor's Office.

E. Summary of Comments Received on the Draft Environmental Impact Statement and the Proposed Forest Plan

Upon issuance of each of the Draft Environmental Impact Statements and Proposed Forest Plans, there was a 120-day review period. Responses to these drafts were solicited through:

-- response forms mailed with the documents;

-- informational open houses in Ranger District communities (Missoula, Frenchtown, Plains, Superior, Thompson Falls, Seeley Lake);

-- presentations to interest groups.

News releases featured by local newspapers, television, and radio stations encouraged participation from the general public. Responses were tablulated, indicating interest and concern about such things as the relationship of Forest planning to other Forest Service programs and planning efforts; the range of alternatives presented in the document with support or opposition registered; tools used in developing the plan; the adequacy or inadequacy of the display of impacts or effects from various alternatives; and the understandability of the documents. The content analysis of comments received on the DEIS, along with the Forest Service responses were published in the first RDEIS. Over 2,000 responses were received on the DEIS (1980) and approximately 200 on the first revised DEIS (1982). Table VI-1 includes only those responses received after public review of the second revised DEIS (1985). The table is arranged to show numbers of responses from different geographical locations and the organizational affiliation of those responding.

Table VI-1: Responses to the Second Revised Draft Environmental Impact Statement and Proposed Forest Plan

	Private	Education	Industry	Environmental	Community	Media	Recreation	Government	TOTAL
Ranger District Communities (Missoula, Seeley Lake, Superior, Plains, Frenchtown, Thompson Falls)	315	2	9	4	2	-	1	1	334
Other Western Montana Communities	96	-	4	2	1	-	2	5	110
Eastern Montana Communities	1	-	-	-	-	-	1	-	2
Out-of-State Responses	17	-	6	3	-	-	1	8	35
TOTAL	424	2	19	9	3	-	5	14	481

A summary of those comments follows:

Range: Public comments responding to the Revised Draft EIS were concerned with range improvements where necessary to manage riparian areas, improve water quality, minimize erosion, improve fisheries and wildlife habitat, and provide for healthy stands of timber within allotments. Some commenters also addressed the need for monitoring in allotments and within prescribed burns on range areas. Several commenters felt that the presence of expansion of noxious weeds, particularly knapweed, was a threatening situation for livestock producers. It was also requested that the Lolo display a range of alternatives addressing "range."

Recreation: Public responses commenting on the Revised Draft EIS addressed the need for a variety of quality recreation experiences. People were concerned that future road-building and accelerated timber harvest in some areas would impact hunting recreation experiences. Willingness-to-Pay values in recreation were questioned, and it was felt that those displayed in the RDEIS were too low. A request was made that the EIS display a range of recreation options addressing quality, availability, and opportunites between alternatives, regardless of the supply/demand situation. It was felt that treatment of the Continental Divide National Scenic Trail in the RDEIS was inadequate. Responses also indicated that the analysis did not adequately take into account the importance of National Forest recreation to the tourism industry in Montana.

Timber: People suggested that the Lolo should provide for the needs of the local timber industry by displaying a return to a "historic" cut level of approximately 160 million board feet per year. Those comments were based principally on the acknowledgment that private lands will be depleted in this decade and the Forest should have the flexibility to increase the timber supply from the National Forest. It was also stated that the Forest should make available timber volumes to supply the capacity of local mills. Responses suggested that the Forest Service has a responsibility to assist local industry because mills were established and expanded in western Montana at the encouragement of the agency.

Other people indicated that the Lolo Forest should initially make available an amount of timber that more closely matches the level of harvest on the Forest during the last few years; they requested that the Plan have the flexibility to expand timber volumes offered to meet potential increases.

The inclusion of remote areas in the timber base was questioned because it may not be economically reasonable to harvest timber there, and it was also requested that the economics of timber sales be addressed.

Water and Soils: Public comments on the Revised Draft EIS reflected a strong desire to protect water quality on the Lolo Forest and a fear that management activities might impact the high quality of water existing in certain drainages on the Forest. It was requested that the Forest Plan contain a basic policy statement on water quality. People cited the need for stong management commitment to do the monitoring called for in the Forest Plan as a way to insure water quality. The Forest was asked to state when, where, and how sediment data will be collected to calibrate and use yield models on the Lolo Forest. It was suggested that areas of the Forest with granitics and other equally erosive soils be removed from the timber base.

Wildlife: Public comments on the Revised Draft EIS addressed two major subjects about wildlife on the Lolo Forest. The first concerns the impacts of roads and timber management on big game populations. People requested that the Elk Logging Study guidelines ("Coordinating Elk and Timber Management," Final Report of the Montana Cooperative Elk-Logging Study, 1970-1985, January 1985) be incorporated and visible in the Lolo Forest Plan. It was stated that project level analyses be done in cooperation with the Montana Department of Fish, Wildlife, and Parks to direct habitat manipulation and management emphasis for selected species. The other major concern had to do with threatened and endangered species, particularly the Grizzly bear, with responses addressing management activities related to Grizzly bears, augmentation, and the need for recovery to be a goal of Forest management related to the bear.

Fisheries: Public comments received on the Revised Draft EIS included responses asking that budget priorities be adjusted to accomodate data collection and model calibration necessary to adequately do the monitoring items listed in this resource area. It was felt that it is not clear how the Forest intends to maintain or improve fish habitat, what levels of funding will be available, and who will be responsible for implementation. The Forest was asked to adjust budgets to accommodate collection of baseline fish model data. It was requested that the Forest display a nondegradation policy for fisheries. People asked that the Rock Creek agreement be displayed as part of the Forest Plan. Comments also suggested that the Forest address cumulative downstream impacts and recognize that several streams on the Forest such as Lolo Creek are at or near degradation thresholds.

Lands: Public comments received on the Revised Draft EIS indicated a corporate concern about the Forest's position on management efficiency related to land adjustment. It was requested that the acquisition of key wildlife habitat in public ownership should be a high priority in the Land Adjustment Plan. The Forest was asked to evaluate energy transmission corridors between alternatives and display them on alternative maps; in addition, it was suggested that the Plan designate rights-of-ways, discuss site management, and address the potential for energy resources development.

Minerals: Public comments received on the Revised Draft EIS suggested that minerals did not receive adequate treatment in the analysis or the Forest Plan. People stated that minerals should affect land assignments in areas of mineral potential. Some responses suggested that Wilderness designations "locked up" valuable national mineral resources.

Fire: Public comments received on the Revised Draft EIS requested that the range of annual suppression costs be checked and that the Montana Airshed Group and Cooperative Smoke Management Plan should be referenced in the Final EIS.

Roads: Public comments received on the Revised Draft EIS indicated concern that construction of projected miles of roads on the Forest will increase sediment, decrease the quality of wildlife habitat, and contribute to the spread of noxious weeds. It was suggested that the present mileage of road was adequate and that old roads should be obliterated and resseeded prior to further construction of new roads. People stated that the Lolo Forest could reduce future increases in road mileages by intensively managing timber on the most suitable sites. The Forest was asked to provide more permanent road closures for wildlife protection.

Social and Economic: Public comments received on the Revised Draft EIS reflected a major concern among local residents dependent on the timber industry that the Forest display an annual volume of timber that is similiar to historic cut level of the 1970's. It was also felt that the Forest Service has a responsibility to local communities dependent on the timber industry. It was felt that military maneuvers are not appropriate on National Forest lands near residental areas.

A response questioned the cost effectiveness of the Proposed Action based on its comparison to other alternatives displayed. Values used for some resources were also questioned.

Visual Quality: Public comments received on the Revised Draft EIS indicated that it is difficult to compare visual quality objectives among alternatives based on the information presented. It was suggested that acres of suitable timber assigned to each visual quality class would be more meaningful.

Wilderness: Public comments received on the Revised Draft EIS were mixed. People felt that the Forest should not recommend additional Wilderness. Others suggested that the Forest recommend additional Wilderness to include areas listed in the Governor's May 10, 1984 recommendation to the Montana Congressional Delegation. This includes the Great Burn, the Clearwater/Monture additions to the Scapegoat Wilderness, Cube Iron/Silcox, the Lolo Creek addition to the Selway Bitterroot Wilderness, an addition to the Welcome Creek Wilderness, and Stony Mountain. It was suggested that the elimination of the Irish Basin/Cache Creek area from the Great Burn recommendation is reason to appeal the Plan.

F. List of Respondents to Second Revised Draft Environmental Impact Statement and Proposed Forest Plan

The following responses have been assigned a code. The code is comprised of the geographic origin of the letter, the affiliation of the commenter, and the numeric order the letter was received within each affiliation group. The following example is the letter received from the Governor of Montana.

WM-G-16

WM = Helena, a western Montana town
G = Government
16 = 16th letter received under Government

FIRST CODE - GEOGRAPHIC LOCATION

Each Ranger District Town
M - Missoula
N - Ninemile @ Huson
P - Plains
S - Superior
SL - Seeley Lake
TF - Thompson Falls

Other Montana Towns
EM - Eastern Montana
WM - Western Montana

Other States
Use Post Office symbols

SECOND CODE - AFFILIATION

C - Community
E - Environmental
ED - Education
G - Government
I - Industry
M - Media
N - Private Individual
R - Recreation

THIRD CODE

Number in order of receipt of letter using affiliation as base.

COMMUNITY

RESPONDENT NAME	ID CODE	PAGE NO
K.E.E.P. COMMITTEE COUNTY OF POWELL DEER LODGE MT 59722	WM-C-1	24
SUPERIOR CHAMBER OF COMMERCE SUPERIOR MT 59872	S-C-2	25
WOODLAND HEIGHTS HOMEOWNERS ASSN 7215 BERYL LANE MISSOULA MT 59801	M-C-3	26

EDUCATION

RESPONDENT NAME	ID CODE	PAGE NO
CHESSIN, MEYER PROFESSOR OF BOTANY UNIVERSITY OF MONTANA MISSOULA MT 59812	M-ED-1/2	30

ENVIRONMENTAL

RESOPNDENT NAME	ID CODE	PAGE NO
ALDRICH, DONALD 410 WOODWORTH MISSOULA MT 59801	M-E-1	32
GREAT BEAR FOUNDATION, THE P.O.BOX 2699 MISSOULA MT 59806	M-E-2	34
GREAT BURN STUDY GROUP ATTN: DALE HARRIS 532 S. 3RD W. MISSOULA MT 59801	M-E-4	39
INLAND EMPIRE BIG-GAME COUNCIL BOX 3286 SPOKANE WA 99220	WA-E-8	39
MONTANA WILDERNESS ASSOCIATION P.O. BOX 635 HELENA MT 59624	WM-E-5	40
NATIONAL WILDLIFE FEDERATION. ATTN: THOMAS FRANCE, ATTORNEY N. ROCKIES NAT. RESOURCE CLINIC 240 N. HIGGINS MISSOULA MT 59801	M-E-6	46
NATURE CONSERVANCY ATTN: CINDY MC ALLISTER P.O. BOX 258 HELENA MT 59624	WM-E-9	60
SIERRA CLUB BITTERROOT-MISSION GROUP P.O. BOX 7315 MISSOULA MT 59807	WA-E-7	39
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DEPARTMENT OF THE ARMY SEATTLE DISTRICT CORPS OF ENGINEERS P.O. BOX C-3755 SEATTLE WA 98124	WA-G-3	72
USDA-SOIL CONSERVATION SERV. G. LOOMIS, STATE CONSERVATIONIST FEDERAL BUILDING, ROOM 443 10 EAST BABCOCK STREET BOZEMAN MT 59715	WM-G-4	73
DEPARTMENT OF ENERGY BONNEVILLE POWER ADMINISTRATION ATTN: ANTHONY R. MORRELL P.O.BOX 3621 PORTLAND OR 97208	OR-G-13	92
DEPARTMENT OF THE INTERIOR OFFICE OF THE SECRETARY OFFICE OF ENV. PROJECT REVIEW RM 488, BLDG 67, DENVER FED.CNTR DENVER CO 80225	CO-G-12	87
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FISH & WILDLIFE SERVICE DEPARTMENT OF THE INTERIOR ENDANGERED SPECIES FIELD OFFICE P.O.BOX 10023 HELENA MT 59626	WM-G-9	76
IDAHO FISH & GAME ATTN: JERRY M. CONLEY, DIRECTOR P.O. BOX 25 BOISE ID 83707	ID-G-8	75
MONTANA DEPARTMENT OF FISH WILDLIFE & PARKS ATTN: W.F. THOMAS 3201 SPURGIN ROAD MISSOULA MT 59801	M-G-11	Refer to page 94
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DAW FOREST PRODUCTS CO. - ATTN: HERB NASH BOX 580 SUPERIOR MT 59872	S-I-13	172
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INLAND FOREST RESOURCE COUNCIL ATTN: WAYNE LUDEMAN 110 E. BROADWAY, ROOM 320 MISSOULA MT 59802	M-I-14	145
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MONTANA POWER COMPANY ATTN: WILLIAM HEADAPOHL P.O. BOX 4467 MISSOULA MT 59806	WM-I-3	121
PLUM CREEK TIMBER CO., INC. 6 CLEARWATER UNIT ATTN: DENNY SIGARS 700 SOUTH AVENUE WEST MISSOULA MT 59801	M-I-7	129
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ALBIN, SIRI P.O. BOX 161 MILLTOWN MT 59851	WM-N-301	180
ALLEN, CLAUDE 9805 RUSTIC ROAD MISSOULA MT 59801	M-N-58	172
ALLISON, JANET R. 128 S. 6TH W. MISSOULA MT 59801	M-N-82	178
ANDERSON, JOHN A. BOX 325 SUPERIOR MT 59872	M-N-104	172
ANDRE', PATRICK 701 S. 2ND W. MISSOULA MT 59801	M-N-235	180
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ARLAND, LINDA 2323 CRESCENT MISSOULA MT 59801	M-N-304	180
ATKINSON, JAMES O. 9933 GRANT CREEK RD. MISSOULA MT 59802	M-N-350	211
AUSTIN, BRIGGS, ALICE, & DENNIS 4741 SUNDOWN ROAD MISSOULA MT 59801	M-N-394	240
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BANCO, MICHELLE 775 MONROE #106 MISSOULA MT 59802	M-N-255	180
BARDAL, JANE 404 N. PATTEE MISSOULA MT 59801	M-N-263	180
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BENTLEY, JIM 3050 TERRACE DRIVE MISSOULA MT 59801	M-N-36	172
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BIRCH, JOAN M. 1956 S. 7TH W. MISSOULA MT 59801	M-N-73	178
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BLACK, TAMARA R. BOX 953 WHITEFISH MT 59937	WM-N-414	180
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BOSSERT, LISA BOX 466 STEVENSVILLE MT 59870	WM-N-368	178
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BRYAN, SUSAN MILES 613 HOLLINS HELENA MT 59601	WM-N-397	180
BUCHERT, LARRY BOX 391 SUPERIOR MT 59872	S-N-130	172
BURKHARDT, CINDY 10242 UPPER MILLER CR. RD. MISSOULA MT 59806	M-N-342	211
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BUTLER, CHEYE ANN 102 DALY APT. 3 MISSOULA MT 59801	M-N-187	180
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CARTER, JACK BOX 152 SUPERIOR MT 59872	S-N-130	172
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CHYTRA, ANN MARIE P.O. BOX 8975 MISSOULA MT 59807	M-N-344	207
CLAUS, CRAIG D. P.O. BOX 818 SUPERIOR MT 59872	S-N-143	172
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COLE, DAVID 721 TURNER STREET MISSOULA MT 59802	M-N-92	178
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CRAWFORD, ALONZO BOX 512 SUPERIOR MT 59872	S-N-113	172
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CRAWFORD, TOM 4305 MILLER CREEK RD. MISSOULA MT 59801	M-N-308	180
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DAVIS, DON & DONNA P.O. BOX 151 DEBORGIA MT 59830	WM-N-142	172
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DEPEE, MIKE WEST ACRES TRAILER COURT LOLO MT 59847	WM-N-50	172
DICKINSON, SHARON 118 NORTH 2ND EAST MISSOULA MT 59801	M-N-163	180
DICKMAN, GEORGE 1711 RIVER ROAD MISSOULA MT 59801	M-N-91	178
DICKMAN, LYNNE 530 WOODWORTH MISSOULA MT 59801	M-N-316	180
DICOMITIS, STEPHAN 328 MCLEOD MISSOULA MT 59801	M-N-300	180
DIETTERT, G. A. 515 W. FRONT STREET P.O. BOX 7609 MISSOULA MT 59807	M-N-13	172
DOUCETH, DIANA L. 1025 HELEN AVENUE #4 MISSOULA MT 59801	M-N-416	180
DOUCETT, DON BOX 5 SEELEY LAKE MT 59868	SL-N-384	172
DRITSHULAR, MARGARITA 655 ABER MISSOULA MT 59801	M-N-168	180
DUGAN, FRANK 515 E. PINE #4 MISSOULA MT 59802	M-N-242	180
ECK, LYNN D. 316 SOUTH AVENUE W. MISSOULA MT 59801	M-N-232	180
ELFELT, STEPHEN M. 147 DUNIWAY HALL UNIVERSITY OF MONTANA MISSOULA MT 59812	M-N-421	180
ERICKSON, KIRBY & PAMELA N.W. 370 BLODGETT CAMP RD. HAMILTON MT 59840	WM-N-363	171

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ESSIG, DON A. 1833 S. 14TH W. MISSOULA MT 59801	M-N-392	235
EWART, RON 805 WALNUT MISSOULA MT 59801	M-N-352	215
FARMER, CLIFTON D. STAR ROUTE 1 BOX 207 CLINTON MT 59825	WM-N-19	172
FELKER, LORY STAR ROUTE CONNER MT 59827	M-N-216	180
FOLSOM, JEFF 236 EDDY STREET MISSOULA MT 59801	M-N-252	180
FOLSOM, LOREEN C. 442 KENSINGTON MISSOULA MT 59801	M-N-86	178
FORMAN, SUSAN 116 NORTH AVENUE E. MISSOULA MT 59801	M-N-290	180
FORREST, DOUGLAS L. 720 CLEAVELAND MISSOULA MT 59801	M-N-155	180
FOSBENDER, JULIE 105 UNIVERSITY MISSOULA MT 59802	M-N-282	180
FOSS, EDWARD L. CONDON MT 59826	WM-N-78	178
FRANIOR, JOHN 314 CONNELL MISSOULA MT 59801	M-N-153	180
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FREEDMAN, JONAH S. 1101 W. GREENOUGH #A-6 MISSOULA MT 59802	M-N-95	178

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GARRETT, MONTE 550 SOMERS AVENUE WHITEFISH MT 59937	WM-N-295	180
GILDOW, WILLIAM 2100 PETTY CREEK ROAD ALBERTON MT 59820	WM-N-9	170
GLAZER, RACHEL 325 S. 4TH W. MISSOULA MT 59801	M-N-80	178
GLOVER, BETTY L. 1531 S. 10TH W. MISSOULA MT 59801	M-N-54	172
GOLDSMITH, JOHN BOX 8973 MISSOULA MT 59807	M-N-162	180
GOLDSMITH, KENNETH 555 FOREST ROAD NORTHFORD CT 06472	CT-N-426	253
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GRAHAM, BETTY 775 MONROE #19 MISSOULA MT 59802	M-N-182	180
GRAY, REBECCA S. 617 RONALD MISSOULA MT 59801	M-N-234	180
GREENE, SARAH L. 406 WOODFORD MISSOULA MT 59801	M-N-302	180
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HACKLEY, C. M. 17100 ROMAN CREEK RD. FRENCHTOWN MT 59834	WM-N-137	194
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HAMBURGER, G. 1049 SOUTH 1ST WEST MISSOULA MT 59801	M-N-93	178
HAMILTON, ANNE 1530 S. 11TH W. MISSOULA MT 59801	M-N-279	180
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HANSON, CRAIG GREENFIELD COURT #18 MISSOULA MT 59802	M-N-354	172
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HARRINGTON, COLLEEN P.O.BOX 8811 MISSOULA MT 59807	M-N-202	180
HART, GEORGE E. BOX 48 SEELEY LAKE MT 59868	SL-N-389	172
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HENWOOD, DANIEL 111 HELENA CT. MISSOULA MT 59801	M-N-294	180
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HOFFMAN, ROGER D. 4756 GRAHAM MISSOULA MT 59802	M-N-18	172
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HOLMQUIST, DEAN 308 S. 6TH E. MISSOULA MT 59801	M-N-219	180
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HOTT, TONY BOX 51 ARLEE MT 59821	WM-N-357	217
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JACKSON, DON B. P.O.BOX 845 BOZEMAN MT 59715	WM-N-134	189
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JAMESON, BRIAN BOX 136 SEELEY LAKE MT 59868	SL-N-6	168
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JOHNSON, DEL BOX 528 BONNER MT 59823	WM-N-31	172
JOHNSON, HARDY BOX 141 MILLTOWN MT 59851	WM-N-17	172
JOHNSON, LORI 511 E. PINE MISSOULA MT 59802	M-N-228	180
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JOSEPH, FRANK 724 EDITH MISSOULA MT 59801	M-N-183	180
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KEIM, CHARLES P. 2400 OLD FORT ROAD MISSOULA MT 59801	M-N-224	180
KIRK, HOWARD G. P.O. BOX 4 CLINTON MT 59825	WM-N-385	172
KNAPP, RAY BOX 732 SUPERIOR MT 59872	S-N-130	172
KUHL, RICHARD 867 N. MAIN KALISPELL MT 59901	WM-N-148	205
KULAWINSKI, DICK 9 EMERALD DRIVE MISSOULA MT 59801	M-N-145	204
LA BRIE, LORRIE P.O. BOX 469 BONNER MT 59823	WM-N-43	172
LAMLEY, BOB 4685 MULLAN ROAD MISSOULA MT 59801	M-N-33	172
LAMOREAUX, ROBYN 1107 GERALD AVENUE MISSOULA MT 59801	M-N-281	180
LANFEUR, LAURA 245 WOODFORD MISSOULA MT 59801	M-N-264	180
LANGLEY, MARGARET 536 COLORADO AVENUE E. MISSOULA MT 59802	M-N-337	211
LAVIGNE, N. F. ROUTE 1 SUPERIOR MT 59872	S-N-358	172
LAY, REBECCA 329 S. 1ST W. MISSOULA MT 59801	M-N-159	180
LEASH, STEVEN 319 E. SPRUCE #2 MISSOULA MT 59802	M-N-251	180
LEWIS, KENTON R. ROUTE 2 BOX 7540 SUPERIOR MT 59872	S-N-130	172
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LUIBRAND, JON 392 CAMAS DRIVE STEVENSVILLE MT 590870	WM-N-38	172
LYAN, RICK 538 N. 3RD W. MISSOULA MT 59802	M-N-286	180
LYDIG, DEAN A. RTE. 5 BOX 450 SPOKANE WA 99208	WA-N-135	190
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MAGONE, JOSEPH M. ROUTE 1, BOX 5 SUPERIOR MT 59872	S-N-130	172
MALING, ANDREW C. 321 S. 2ND W. #2 MISSOULA MT 59801	M-N-179	180

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RESPONDENT NAME	ID CODE	PAGE NO
MANCINI, WILLIAM BOX 752 . SUPERIOR MT 59872	S-N-131	172
MATTHEWS, JERRY 1175 REGENCY DRIVE PITTSBURGH PA 15237	PA-N-180	180
MCCAFFERY, DAN 202 SOUTH 3RD WEST MISSOULA MT 59801	M-N-407	178
MCCARTHY, GERALD 204 E. PINE #7 MISSOULA MT 59802	M-N-189	180
MCCLELLAN, SARA L. 225 ADAMS #1 MISSOULA MT 59802	M-N-213	180
MCCOLLUM, RODNEY L. DIAMOND ROAD SUPERIOR MT 59872	S-N-118	172
MCCORMICK, PATRICK J. 721 COTTONWOOD MISSOULA MT 59801	M-N-299	180
MCCOY, STEVE & PAT 610 PIONEER CT. MISSOULA MT 59801	M-N-412	180
MCCREADY, R. G. 520 S. ORANGE MISSOULA MT 59801	M-N-278	180
MC DONOUGH, JIM 442 STEPHENS MISSOULA MT 59801	M-N-266	180
MC KINLEY, JIM C. 14155 HELLGATE LANE CLINTON MT 59825	WM-N-53	172
MC LAMEY, MARC 420 E. FRONT MISSOULA MT 59802	M-N-165	180
MC LEES, MR. & MRS. WILLIAM BOX 219 SUPERIOR MT 59872	S-N-125	172
MC LEOD, SCOTT 1010 S. 3RD W. MISSOULA MT 59801	M-N-184	180
MC MURRAY, DANA 1206 CLEVELAND MISSOULA MT 59801	M-N-395	211
MEEKS, AL RTE. 2 BOX 6215 SUPERIOR MT 59872	S-N-130	172
MENAKIS, JAMES BOX 9144 MISSOULA MT 59807	M-N-284	180
METIVIER, TODD 2920 BRIGGS MISSOULA MT 59801	M-N-52	172
MICHELSON, WARREN 336 SOUTH 5TH EAST MISSOULA MT 59801	M-N-413	180

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
MICHNEVICH, ADAM FRAN-DAN RANCH ROCK CREEK ROAD ROUTE 1 - BOX 1450 CLINTON MT 59825	WM-N-425	250
MILLER, JULIE BOX 278 SUPERIOR MT 59872	S-N-112	172
MILLER, KEN 247 ESSEX LOLO MT 59847	WM-N-29	174
MILLER, LARRY & MARGARET 938 RIMINI CT. MISSOULA MT 59801	M-N-243 327	180
MILNER, DORIS NW 75 RICKETTE RD. HAMILTON MT 59840	WM-N-322	180
MITCHELL, DAVID W. 4022 SOUTH AVENUE W. #76 MISSOULA MT 59801	M-N-415	180
MOFFETT, DIANA	?-N-333	211
MONCURE, PEYTON 300 JOHNSON MISSOULA MT 59801	M-N-74	178
MONNIG, EDWARD 518 EVANS MISSOULA MT 59801	M-N-88	178
MOORE, TINA 329 S. 1ST W. MISSOULA MT 59801	M-N-158	180
MOORE, TRACY 1035 STODDARD MISSOULA MT 59801	M-N-259	180
MORARRE, TOM BOX 305 LOLO MT 59847	WM-N-303	180
MORGAN, DANIEL M. 5 VIRGINIA DRIVE MISSOULA MT 59803	M-N-12	172
MORSE, ED 736 MONTANA E. MISSOULA MT 59802	M-N-60	172
MUNDS, GLEN S. BOX 635 BONNER MT 59823	WM-N-26	172
MUSLIS, ROBERT S. 840 W. PARK AVE. HIGHLAND PARK IL 60035	IL-N-223	180
MYERS, SHARON A. 214 S. 5TH W. MISSOULA MT 59801	M-N-291	180
MYLLYMAKI, MELANIE 6440 MULLAN RD. MISSOULA MT 59802	M-N-217	180
MYSLIS, SARAH 515 E. PINE MISSOULA MT 59802	M-N-348	211

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
KADEAU, M. STEVEN BOX 3882 MISSOULA MT 59806	M-N-227	180
NAPIAR, JOHN W. 1704 GLASS SPOKANE WA 99205	WA-N-400	39
NASH, HERB H. ROUTE 1 BOX 3040 SUPERIOR MT 59872	S-N-371	172
NELSON, CHARLENE BOX 52 FLOWEREE MT 59440	WM-N-221	180
NELSON, MIKE 1304 400 CONIFER DRIVE HUSON MT 59846	WM-N-188	180
NELSON, TED 301 COLLEGE STEVENSVILLE MT 59870	WM-N-59	172
NICHOLLS, JERRY O. BOX 466 STEVENSVILLE MT 59870	WM-N-367	220
NISEWANGER, DON 1611 RONALD MISSOULA MT 59801	M-N-75	178
NONNENMACHER, MARK BOX 942 BONNER MT 59823	WM-N-24	172
NORRIS, ABBOTT L. & JACKY 1545 S. 4TH W. MISSOULA MT 59801	M-N-315	180
NUEPELE, LORNA 320 N. HIGGINS #1 MISSOULA MT 59802	M-N-361	215
O'BRIEN, KEVIN P.O. BOX 20095 MISSOULA MT 59801	M-N-374	178
O'CONNOR, K. 232 HASTINGS MISSOULA MT 59801	M-N-253	180
ODEGARD, PETER B. 7385 BERYL LANE MISSOULA MT 59801	M-N-378	227
OLHOEFT, DIANE 1505 SHERWOOD, APT. 1 MISSOULA MT 59802	M-N-152	180
OLSON, MICHELLE 2109 LYMAN BILLINGS MT 59101	EM-N-277	180
ORALLE, JOHN 518 S. 2ND W. MISSOULA MT 59801	M-N-318	180
OSET, ROBERT BOX 320 LOST HORSE ROAD HAMILTON MT 59840	WM-N-129	186
OSTER, ALLEN L. NW 5420 KLEMENTS LANE FLORENCE MT 59833	WM-N-57	172
OTTINGER, DEBI P.O. BOX 3722 BOZEMAN MT 59772	WM-N-375	178

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
OWENS, DUSTIN R. P.O. BOX 706 HAMILTON MT 59840	WM-N-376	178
PALMATIER, MS. DIANE ROUTE 1 BOX 1658 GALWAY NY 12074	NY-N-409	243
PARKIN, BOBBI BOX 134 SUPERIOR MT 59872	S-N-130	172
PEARSON, C. B. 523 E. FRONT #2 MISSOULA MT 59801	M-N-285	180
PERKINS, MELODY 1531 S. 10TH W. MISSOULA MT 59801	M-N-260	180
PESANTE, STEVE BOX 366 MILLTOWN MT 59851	WM-N-405	172
PETERS, JOHN A., JR. P.O. BOX 466 BONNER MT 59823	WM-N-20	172
PHELPS, JAMES 2110 BRADBROOK COURT BILLINGS MT 59102	EM-N-144	202
PILSKALNS, ANDREW	?-N-343	211
PINSKI, LOREN 802 PRINCE MISSOULA MT 59801	M-N-210	180
PLENGER, TIM 10100 GRANT CREEK MISSOULA MT 59802	M-N-201	180
PLUMMER, DAVID J. 528 DALY, #4 MISSOULA MT 59801	M-N-226	180
POLISAR, JOHN 340 JEFFERSON APT. 6 MISSOULA MT 59802	M-N-215	180
PRICE, LYNN M. 618 SOUTH 2ND MISSOULA MT 59801	M-N-321	180
PRIVETT, EARL F. 4641 CHANDLER MISSOULA MT 59801	M-N-67	172
PRUITT, C. 510 S. 5TH E. MISSOULA MT 59801	M-N-419	180
PURINTON, DONALD 1312 APACHE RICHARDSON TX 75080	TX-N-8	168
QUINN, DAVID R. 6750 MULLAN RD. MISSOULA MT 59802	M-N-30	172
RANSIER, ALLEN 8645 MOURNING DOVE MISSOULA MT 59801	M-N-46	172
RAY, GARY DEPARTMENT OF BOTANY UNIVERSITY OF MONTANA MISSOULA MT 59812	M-N-311	180

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
RAY, NANCY 301 KIWANIS ST. #6 MISSOULA MT 59802	M-N-220	180
RAYMOND, MICHAEL L. P.O. BOX 3546 BOZEMAN MT 59772	WM-N-377	178
REED, MRS. PAULA SUPERIOR MT 59872	S-N-124	172
REID, SAMUEL A. 1627 SOUTH 13TH WEST APT A MISSOULA MT 59801	M-N-336	211
REID, SUZANNE 1135 MCDONALD AVENUE #105 MISSOULA MT 59801	M-N-307	180
REYNOLDS, J. R. MONTANA GENERAL INSURANCE AGENCY P.O. BOX 7725 MISSOULA MT 59807	M-N-11	171
RHODES, JACQUELINE 45 GREENLAND ROUTE 4 MISSOULA MT 59802	M-N-174	180
RICE, CHRIS BOX 437 BONNER MT 59823	WM-N-22	172
RICKERTT, RON BOX 173 SUPERIOR MT 59872	S-N-130	172
RICKETT, DONALD W. RTE. 1 BOX 513 SUPERIOR MT 59872	S-N-121	172
RICKETT, MR. & MRS. JOE SUPERIOR MT 59872	S-N-126	172
RISTER, CARLA 10355 GRANT CREEK RD. MISSOULA MT 59802	M-N-355	178
ROBERTS, DEXTER M. 223 E. SUSSEX AVENUE MISSOULA MT 59801	M-N-379	178
ROBISON, ROGER 1426 HAMILTON HEIGHTS ROAD CORVALLIS MT 59828	WM-N-132	187
ROTAR, MARK F. 700 W. KENT MISSOULA MT 59801	M-N-70	178
RYAN, DAVID J. 519 WHITNEY LAND MISSOULA MT 59802	M-N-83	178
RYAN, RICK 538 N. 3RD W. MISSOULA MT 59802	M-N-325	204
SAGMILLER, ELOISE BOX 752 RONAN MT 59864	WM-N-164	180
SARGENT, MRS. LEONARD R. SARGENT RANCH CORWIN SPRINGS MT 59021	WM-N-393	239

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
SCHAFER, MARILYN 501 NORTH 2ND WEST MISSOULA MT 59801	M-N-156	180
SCHARFE, PAT 9325 WOODWIND TR. MISSOULA MT 59802	M-N-225	180
SCHMITT, DAVID M.	?-N-330	172
SCHOLES, JENNIFER 1902 WHITMAN BUTTE MT 59701	WM-N-231	180
SCHOONOVER, ADRIAN	S-N-130	172
SCOTT, JOHN 250 N E TOMAHAWK IS. DR. PORTLAND OR 97217	OR-N-402	39
SCOTT, RANDY 575 E. PINE MISSOULA MT 59802	M-N-196	180
SECCOMB, MARGIE 1197 ROLLINS MISSOULA MT 59801	M-N-248	180
SEELEY, CHUCK 311 RIMROCK WAY MISSOULA MT 59803	M-N-32	172
SEPT, DONALD D. BOX 5700 SUPERIOR MT 59872	S-N-130	172
SEWELL, TOM R. 5131 KOCH LANE FLORENCE MT 59833	WM-N-136	191
SEXTON, RAY L. 3125 TERRACE DRIVE MISSOULA MT 59803	M-N-25	174
SEXTON, ROBERT L. 8770 DOUGLAS CIRCLE HELENA MT 59601	WM-N-312	180
SHAPLEY, MARK 333 FAIRVIEW MISSOULA MT 59801	M-N-369	223
SHERMAN, FRANK 2307 PLEASANT MISSOULA MT 59801	M-N-35	172
SHERWOOD, KIM 815 CLEVELAND MISSOULA MT 59801	M-N-347	211
SHEZZIE, JEFF 1403 1/2 VAN BUREN MISSOULA MT 59802	M-N-190	180
SHOVILIN, TERRY A. 7250 LANG DRIVE #24 MISSOULA MT 59801	M-N-171	180
SHULMAN, PAULA 425 MADISON MISSOULA MT 59801	M-N-353	211
SILVERTHORN, SAMUEL C. P.O. BOX 24 PLAINS MT 59859	P-N-5	167

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
SIMMONS, JOHN L. ROUTE 3 BOX 137 CHATTAROY WA 99003	WA-N-411	39
SLESERT, MICHAEL L. BOX 930 TROY MT 59935	WM-N-287	180
SLOTNICK, JOSH 3811 STEPHENS #7 MISSOULA MT 59806	M-N-212	180
SMEDERSON, GEORGE R. 1612 TAMARACK MISSOULA MT 59802	M-N-205	180
SMITH, ANDY 1715 9TH STREET MISSOULA MT 59801	M-N-89	178
SMITH, JUDY 224 CROSBY MISSOULA MT 59801	M-N-238	180
SMITH, KATHLEEN F. 1802 27TH AVENUE MISSOULA MT 59801	M-N-173	180
SMITH, LINDA 315 S. 4TH E. MISSOULA MT 59801	M-N-328	211
SMITH, PAUL R. 831 ROLLINS MISSOULA MT 59801	M-N-172	180
SMITH, THOMAS C. P.O. BOX 401 MILLTOWN MT 59851	WM-N-386	172
SMITH, WILLIAM G. 2948 W. CENTRAL MISSOULA MT 59801	M-N-68	172
SNYDER, CAROL 506 EDDY MISSOULA MT 59801	M-N-230	180
SNYDER, PAUL P.O. BOX 370 STEVENSVILLE MT 59870	WM-N-97	178
SPANGLER, MIKE & CONNIE BOX 268 SUPERIOR MT 59872	S-N-119	172
SPEYER, TIMOTHY 613 HOLLINS HELENA MT 59601	WM-N-100	180
STALTZ, PETER	?-N-351	211
STAMMERS, MARTHA BOX 75 CHARLO MT 59824	WM-N-380	230
STEICHER, BRIAN G. 726 1/2 S. 4TH W. MISSOULA MT 59801	M-N-289	180
STEMPLE, LOUIS L., JR. 1738 W. KENT MISSOULA MT 59801	M-N-149	172
STEPHAN, DAVID A. 2404 39TH STREET MISSOULA MT 59801	M-N-55	172

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
STEPHAN, KEN 7105 DEVONSHIRE LANE MISSOULA MT 59801	M-N-56	172
STIRTIUS, RON BOX 8862 MISSOULA MT 59807	M-N-283	180
STOLZ, R. KENNETH 5220 ELK RIDGE MISSOULA MT 59802	M-N-359	178
STRACK, JON 104 GOLD NUGGET DRIVE MISSOULA MT 59801	M-N-64	172
STRONG, TONI R. 3603 PAXSON MISSOULA MT 59801	M-N-372	211
SULLIVAN, MRS. JAMES BOX 447 SEELEY LAKE MT 59868	SL-N-72	178
SULTON, JOANNE M. 515 E. PINE MISSOULA MT 59802	M-N-186	180
SUNTE, BARRY 737 S. 1ST W. MISSOULA MT 59801	M-N-272	180
SWANSON, JOHN R. P.O. BOX 922 BERKELEY CA 94701	CA-N-7	169
TEETERS, LARRY L. 207 NEW MEADOW CT. MISSOULA MT 59801	M-N-103	172
TERRAMIN, MICHAEL & NANCY 2502 GLEASON MISSOULA MT 59801	M-N-360	218
TEVESQUE, RICHARD BOX 3882 MISSOULA MT 59806	M-N-296	180
THEUCHEL, WAYNE 635 UTAH E. MISSOULA MT 59802	M-N-267	180
THOMAS, MATT 517 N. 3RD ST. W. MISSOULA MT 59802	M-N-324	207
THORNELL, ROBIN 1101 W. GOLD BUTTE MT 59701	WM-N-178	180
TIMBERMAN, SCOTT 624 GERALD MISSOULA MT 59801	M-N-195	180
TIPPLESON, DR. HIGBY FT. HARRISON MT 59636	WM-N-313	180
TODD, HEATHER 119 CRAIG HALL U OF M MISSOULA MT 59812	M-N-349	219
TORRE, RICHARD 321 POPHAM LANE CORVALLIS MT 59828	WM-N-249	180

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE
TRACY, ANN 1633 5TH AVENUE WEST MISSOULA MT 59801	M-N-200	180
TRAUSCHT, JOHN & SALLY 1420 RONALD MISSOULA MT 59801	M-N-81	178
TRUDEAU, J. EDMOND RTE. 1 BOX 753 SUPERIOR MT 59872	S-N-111	172
TUHOLSKE, JACK 224 E. SPRUCE MISSOULA MT 59802	M-N-403	242
TWETEN, MARLEN 610 E. SUSSEX AVENUE MISSOULA MT 59801	M-N-2	163
VAN ROOY, SUSAN P.O. BOX 120 SEELEY LAKE MT 59860	SL-N-1	162
VAN SICKLE, W. S. 1035 STODDARD MISSOULA MT 59802	M-N-204	180
VAUGHAN, MR. & MRS. KEITH BOX 369 SUPERIOR MT 59872	S-N-122	172
VIGUS, RON G. P.O. BOX 672 HELENA MT 59624	WM-N-423	180
WALKER, SUSAN C. 241 SOUTH 5TH EAST #3 MISSOULA MT 59801	M-N-261	180
WALL, ROBERT A. 1581 HOLBORN ROAD CORVALLIS MT 59828	WM-N-147	172
WARD, JOHN 2338 MOUNT MISSOULA MT 59802	M-N-404	178
WEBBER, DR. DOUGLAS 12075 O'BRIEN CREEK RD. MISSOULA MT 59801	M-N-98	178
WELLS, AL P.O. BOX 8446 MISSOULA MT 59807	M-N-366	219
WHEELER, JAMES B. 224 CROSBY MISSOULA MT 59801	M-N-319	180
WHITCRAFT, LAWRENCE 4404 HOOVER LANE STEVENSVILLE MT 59870	WM-N-49	172
WHITE, RON 524 BEVERLY MISSOULA MT 59801	M-N-206	180
WHITESITT, DAVID D. BOX 322 SEELEY LAKE MT 59868	SL-N-323	206
WIEGERT, GRANT 1558 SOUTH 5TH WEST MISSOULA MT 59801	M-N-247	211
WIELINGA, BRUCE 3523 W. CENTRAL MISSOULA MT 59801	M-N-365	178

PRIVATE INDIVIDUALS

RESPONDENT NAME	ID CODE	PAGE NO
WILLIAMS, CARYL P.O. BOX 7381 MISSOULA MT 59807	M-N-364	215
WINGO, GENE R. 14020 HAMPTON DRIVE TURAH MT 59825	WM-N-388	232
WOLFF, JOE R. STAR ROUTE BOX 411 ST. REGIS MT 59866	S-N-130	172
WOOD, PATRICK J. 9520 BUTLER CREEK MISSOULA MT 59801	M-N-192	180
WOODGARD, WES 81 LOG CABIN LANE STEVENSVILLE MT 59870	WM-N-424	180
WOODS, JOHN P.O. BOX 438 LINCOLN MT 59639	WM-N-41	172
YODER, TENNIE 1853 S. 11TH W. MISSOULA MT 59801	M-N-90	178
YOUNGGREN, RODNEY 13555 CRYSTAL CREEK RD. CLINTON MT 59825	WM-N-51	172
ZELAZNY, JOHN UNIVERSITY OF MONTANA MISSOULA MT 59812	M-N-338	211
ZENK, PAUL M. 508 EVAN KELLY RD. MISSOULA MT 59801	M-N-362	178

RECREATION

RESPONDENT NAME	ID CODE	PAGE NO
AMERICAN FISHERIES SOCIETY 370 3RD AVENUE N W KALISPELL MT 59901	WM-R-4	260
CONTINENTAL DIVIDE TRAIL SOCIETY JAMES R. WOLF, DIRECTOR P.O. BOX 30002 BETHESDA MD 20814	MD-R-2	257
MONTANA BOWHUNTERS ASSOC. R.R. 1, BOX 1702 LEWISTOWN MT 59457	EM-R-3	259
WOLFF, ROBERT J. P.O.BOX 221 CLINTON MT 59825	WM-R-5	263

G. Comments to Second Revised Draft Environmental Impact Statement and Proposed Forest Plan, and Forest Service Responses

WM-C-1

April 22, 1985

To whom it may concern:

Enclosed is the transcript of the meeting held April 3rd.,1985 at the Granite High School in Philipsburg, Mt. , regarding the Lolo National Forest Plan - Chapter IV, Rock Creek, and the proposed logging in the Rock Creek Drainage.

There were one hundred seventy eight proponents for the continuation for logging and timber sales on the Rock Creek Drainage. There were no opponents. Two hundred and twenty five people attended the meeting.

K.E.E.P. Committee
Chairman;

Everett L. Miller
Everett L. Miller

FOREST SERVICE RESPONSE

WM-C-1

Refer to M-I-14 Forest Service Response to Inland Forest Resource Council.

S-C-2

Superior Area
Chamber of Commerce
Superior, Montana 59872 P.O. BOX 483

May 28,1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONT. A
MAY 29 1985
RECEIVED

Orville Daniels, Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, Mt. 59807

The Board of Directors of the Superior Area Chamber of Commerce, representing over forty active business memberships, stand emphatically opposed to the adoption of the Preferred Alternative to the most recent Lolo National Forest Plan.

Economically Western Montana cannot afford such a negative impact upon its most visible and viable economic base. The compounding effects of the loss of forest revenue, loss of related employment, and the loss of generally expendable dollars into the economy can only precipitate devastating increases in local tax levies.

The Preferred Alternative Plan represents a regressive approach counter to current national economic and social political climates. Forest management practices must recognize an obligation to such elements as the current national budget deficit, the GNP, and the balance of trade deficits. A

We urge the Lolo Forest to permit economically viable timber sales consistant with levels characteristic of the last fifteen years. B

Your consideration of our concerns and your commitment to them will be anticipated.

Thank you.

, President
Superior Area Chamber of Commerce

FOREST SERVICE RESPONSE

S-C-2

A In the Proposed Action, annual volume in the first decade is expected to be 122 million board feet (MMBF), including 15 MMBF unregulated. That is projected to increase to 146 MMBF (including 15 MMBF unregulated) in the second decade. From 1979 to 1985, the Lolo offered about 100 MMBF annually; however, it sold only an average of 60 MMBF per year. The Forest presently has a number of timber sales prepared, including some offered but unsold. Under present poor market conditions, this unsold volume continues to accumulate, providing the Forest the flexibility to adjust to short-term increases if more timber is demanded. If market conditions demand volumes beyond the Forest Plan projections, the Forest would be required to address the problem through a Forest Plan revision. National Forest Management Act regulations outline the revision process, which includes full public involvement.

The Lolo Forest Plan responds to the existing social and economic structure of local communities. It represents a response to varied public expressions of those social and economic needs derived from public involvement. The Forest Plan is intended to offer levels of timber volume that support rather than impact base employment, income and job distribution in local communities. The Forest will attempt to respond to local community needs for timber regardless of the larger market issue. Yearly timber sale programs will be designed to accommodate local small mills to the extent possible and by offering species and volumes where they will sell on the Forest. In addition, the Forest is attempting to identify where costs can be reduced in preparing and administering sales.

The ability of the Lolo Forest to project a higher volume of timber than that displayed in the Forest Plan is limited by the nature of the resources available, utilization and technology, and public attitudes about management of other forest resources. The biological capability of the Forest to support a yearly volume such as 160 MMBF would mean a significant reduction in other resource outputs, as shown in alternatives analyzed in the Final EIS. If other resources are to be maintained at levels suggested by the public, increased timber volume would have to come from marginal lands where timber harvest may not be cost effective.

In response to the national budget deficit, the Lolo Forest is attempting to assure that the greatest return possible is generated through the timber sales program while protecting other resource values. Balance-of-trade deficits are largely beyond the scope and responsibility of the Lolo Forest.

B To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. In some cases, particularly during the intial sale entry into an unroaded area, the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. The economic analysis in the Forest Plan also considers long-term management for the entire forest rather than individual sales.

M-C-3
(1 of 4)

FOREST SERVICE
LOLO
JUN - 1 1985
RECEIVED

May 28, 1985
7215 Beryl Lane
Missoula MT 59801

Orville Daniels
Supervisor
Lolo National Forest
USDA Forest Service
Fort Missoula
Missoula MT

Dear Mr. Daniels:

The residents of the Woodland Heights area, located immediately adjacent to the Blue Mountain Recreation Area, are deeply concerned about Forest Service management of the area, particularly as called for in the propose Lolo Forest Plan. A

We are particularly concerned about the Memorandum of Agreement with the U.S. Army governing military training exercises at Blue Mountain. In light of the recent increase in military activity, reduced Forest Service budgets, the issue of coordination in the Forest Plan, and existing significant safety issues not covered in the Forest Plan, we offer the enclosed statement as our comment on the Foret Plan. B

Several of us also feel that a meeting between residents of this area, yourself, and the local district ranger would help more specifically and clearly communicate our concerns about the area and maintain channels of communication in general. Please take this under advisement. We would like to show you in the field the nature of several of our concerns. C

Sincerely,

Stephen F. McCool
Stephen F. McCool, President
Woodland Heights Homeowners Association

FOREST SERVICE RESPONSE

M-C-3

A National Forest administration of the Blue Mountain area began in 1952 with President Harry S. Truman's Executive Order 10403 assigning a 4,869-acre portion of the Fort Missoula Military Reservation to the Lolo National Forest to administer. The Executive Order provided "that such lands shall remain subject to the unhampered use of the Department of the Army for purposes of national defense." The area has been used for local military training maneuvers since that time.

B A Memorandum of Understanding facilitates the coordination of activities between the Forest Service and the Army. Until this year, Army operations were occasional, involving small numbers of personnel and equipment. Tank training was infrequent and usually confined to existing roads. Under those conditions, conflicts were minimal. This year, however, activities have accelerated to include extensive tank use and expanded areas for weapon firing on Blue Mountain. A recent letter from the Department of the Army identifies additional facilities planned for 1988. The Memorandum of Understanding requires the Army to prepare an environmental assessment of proposed improvements or alterations, and they have agreed to do so.

C Public use in and around the Blue Mountain Recreation Area has changed since the Executive Order was issued. Today there are residential subdivisions immediately adjacent to the Area, and public recreational use has increased considerably during the past 30 years. While other portions of the area have been closed to target shooting for safety reasons, the Army has stepped up its weapons firing. The expanded public recreational use and the intensified military activities have resulted in concern by local sub division residents. The Forest is, therefore, initiating action with all concerned parties to alleviate the conflict.

M-C-3
(2 of 4)

STATEMENT OF CONCERNS ABOUT MILITARY USE OF BLUE MOUNTAIN RECREATION AREA

WOODLAND HEIGHTS HOMEOWNERS ASSOCIATION

As residents of the Woodland Heights area, immediately adjacent to the Blue Mountain Recreation Area and military reservation, we would like to express our concerns about the rapidly accelerating level and change in character of military use of the area. We recognize that the Blue Mountain area has been established as a military reservation for an extended period of time. We also realize that the management of the area is conducted under a memorandum of understanding between the U.S. Army and the Forest Service.

It is our understanding that the nature of the military operations planned for Blue Mountain will undergo significant change from past practice. In the past, the area was used primarily for training of units with only small arms capabilities on an occasional basis. The current plans call for use of the area for up to 29 tank crews, by units using a number of medium size weapons, and by other units for other training exercises.

As individuals living immediately adjacent to the proposed firing ranges, we are alarmed at the possible safety issues resulting from the change in frequency and type of use. For example, while signs have been posted on the exterior of the area indicating that it may be dangerous for one to enter the Blue Mountain and to telephone a number for more information, no telephone number is listed, making it impossible for one to determine if military operations are in progress, planned, or the size of the endangered area. We are also concerned about the size of the surface danger zones for various operations and training exercises as shown in Appendices D-G of the Blue Mountain Range Regulation. At least one of these is outside the formally designated military reservation. Since the Blue Mountain Recreation Area is large with multiple accesses, there is a clearly established safety issue of adequate notification of dangerous military activity. We feel that this size of danger area is unacceptable in an urban area. We find the possibility of night firing particularly dangerous. We are also concerned about the possibility of ammunition accidentally left in the area and being discovered or accidentally being fired by local children and recreationists. We are particularly dismayed that the Blue Mountain Range Regulation does not address these concerns and that apparently careless military activity has taken place.

Representatives of the Army itself have acknowledged safety violations. While they have stated a willingness to correct them, we are concerned about their apparent lack of awareness of private lands near the firing and danger zone, the location of these lands, and their uses. We are clearly concerned about the competency to manage safety when Army representatives are unaware of long established onsite and nearby land use patterns.

A second issue with which we are concerned deals with the environmental

M-C-3
(3 of 4)

VI-28

impacts of the proposed activity. The extensive use of tracked vehicles in this area will, without question, result in long lasting and possibly irreversible damage to the resource. This is particularly important in light of the Forest Service's efforts over the last decade to rehabilitate civilian induced damage. We note that the Blue Mountain Range Regulation prohibits wheeled or tracked vehicle travel off roads or seeded areas. Yet, we have observed considerable activity of these vehicles in seeded areas, that is, the opened seeded forage lands of lower elevation areas. In addition, we've seen considerable damage to young growing trees. The memorandum of agreement betwen the Forest Service and U.S. Army requires such damage to be repaired. We have not observed any efforts to meet this requirement. With increased use of the area, and reduced Forest Service budgets for supervision, we are concerned that such violations will continue.

The proposed significant change in use and upgrade of the military facilities have, we believe, the potential for significant, irretrievable, impacts on the social and natural environment. Such potential impacts should be identified, and mitigating actions developed, prior to initiation of this program. However, no environmental impact statement has been prepared to meet this goal. We are dismayed that the U.S. Army has neglected to meet the provisions of the National Environmental Policy Act of 1970, and request that it initiate the EIS process prior to completing the remaining summer schedule and prior to a final decision on the suitability of the Blue Mountain Recreation Area for the increased military activity.

A third issue concerns use of the Blue Mountain Recreation Area as a significant local recreation area. Many of our families have used the area extensively for the last several years, while the military activity was at its normal and customary level. During that time, we did not view the military activity as disruptive or inappropriate. This area is also an important community recreation resource. Apparently, the U.S. Army fails to understand the level and type of recreational activity ongoing here, nor is there evidence of actions taken to protect that the availability of this recreation resource. We feel that the closure of the area during most of the available time for recreation, i.e., the summer, comes at great cost to the Missoula community. Again, we are deeply troubled that Army decision makers display such a lack of awareness of the current and long established use of the area.

We are concerned about the appropriateness of such large scale, intensive, and intrinsically dangerous activity in a heavily used recreation area important to the community and close to a number of homes. Tanks positioned and firing 100 feet from homes, danger zones that extend far beyond the boundaries of the area, and grenade launchers simply don't belong here. We believe that existing military ranges, which have been extensively used in the past, such as at Townsend, are far more appropriate, safer, more suitable and less disruptive for this type of training. They apparently were adequate in the past. The Army itself indicated at a meeting with local individuals that the Blue Mountain range is a "luxury", suggesting that its current and planned uses aren't that necessary.

M-C-3
(4 of 4)

Unfortunately, the individuals living in this area learned about the change in use only when it occurred. No attempt was made to inform the public, or discuss with local landowners these plans, the potential social and environmental consequences, or mitigating actions. A meeting was held only after landowners requested information. We feel that the Army has reinforced the public image of it as a large, insensitive, and unresponsive federal bureaucracy.

We clearly feel that these issues must be evaluated prior to additional training and use of the area. We know that new facilities, such as a heliport, are planned. We feel that a full evaluation of the consequences of of the existing program must be subject to the NEPA process prior to continuing with the current program.

M-ED-1

University of Montana
Missoula, Montana 59812

Department of Botany (406) 243-5222

FOREST SERVICE
LOLO NATIONAL FOREST
MAR - 5 1985
RECEIVED

1 March 1985

Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

I have before me the Revised Statement of January 1985 for the Lolo National Forest.

My particular interest is in the relationship between roading and the invasion of noxious weeds. In the Summary Statement, I found one statement concerning the possible use of herbicides for controlling noxious weeds on rangeland and one which mentioned herbicide maintenance of roadsides.

However, there seems no systematic consideration of the larger question of roading and invasion of noxious weeds. I would very much appreciate your perspective on this question.

Sincerely,

M. Chessin
Meyer Chessin
Professor of Botany

MC/hr

Equal Opportunity in Education and Employment

FOREST SERVICE RESPONSE

M-ED-1&2

Roads do provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time, noxious weeds are being found in Wildernesses or other undisturbed sites. The basic problem in noxious weed management is a lack of a good understanding of the autecological attributes of them or the synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work done todate has been related to cereal crop and range or pasture land control with limited emphasis on understanding the basic life cycle of the plant.

While herbicide use may occur under special conditions, the topography and vegetation cover on the Lolo make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot and Flathead forests. Preliminary results of the study suggest a number of management practices that may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.
The noxious weed problem is identified in Range Management Concern No. 3.

M-ED-2

University
of Montana
Missoula, Montana 59812

Department of Botany (406) 243-5222

21 May 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 23 1985
RECEIVED

Supervisor
Lolo National Forest
U.S. Forest Service
Fort Missoula
Missoula, MT 59801

Dear Sir:

Please consider this a formal comment on the most recently promulgated Forest Management Plan. I would like to know how the plan addresses the question of noxious weed invasion of roads to be built in previously roadless areas.

Sincerely,

M. Chessin

Meyer Chessin
Professor of Botany

MC/hc

second letter

Equal Opportunity in Education and Employment

M-E-1

Dea Aldrich
410 Woodworth
Missoula, MT. 59801
April 22, 1985

Mr. Orville L. Daniels
Forest Supervisor,
Lolo National Forest
Bldg #24, Fort Missoula,
Missoula, MT 59801

Dear Orville:

The Lolo Forest Re-Revised DEIS over emphasizes the timber values, minimizes cost of logging impacts on other forest values, and assumes questionable fringe benifits from logging. A

I do not think we can have increased timber harvests, increased domestic grazing and increased roading and expect to improve wildlife habitat, to enhance dispersed recreation, or to even maintain existing hunter opportunities.

Any increase in siltation or water temperatures will have an adverse impact on fishery values that are already in trouble. Grazing permits that permit access to riperian zones should be avoided. B

It is alarming to think that we are going to open new areas to roading and other actions that create a seed bed for noxious weeds which we have not shown the determination or ability to suppress once they are introduced. C

Though concerned, I will not address the economics of logging on the Lolo Forest. Others more capable I am sure will be commenting on it.

I am more comfortable discussing the roadless areas as I have tracks in nearly all of them and have a strong feeling for them. My comments are addressed to alternative D.

0 1220 and 0 1799 do not need management to accomplish the objectives stated in F and would be much more secure under H. They offer hunters, hikers and fishermen and opportunity to escape the maze of logging roads that surround these units. D

0 1301: Unfortunately the removal of Schley MT and the road to Kid Lake makes this unit very narrow. The boundary recommended by the Montana Wildlands Coalition would be more acceptable. The Fs and Gs that have been deleted could be left as Hs without commodity loss. Identifying these small units on the ground will generate confusion and dissension. E

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FOREST SERVICE RESPONSE

M-E-1

A The preferred alternative, Alternative d, allows for a timber harvest level lower than the amounts harvested between 1962 and 1970 but higher than the amounts currently being harvested. The potential increase in domestic grazing comes from the forage increase following timber harvest. Forestwide Standard No. 52 states that Forest roads will be managed "...to provide recreation, wildlife, firewood and other uses." This management will involve "...leaving some roads open, closing some roads seasonally, and closing other roads on a permanent basis."

The Forest Plan provides direction designed to reduce conflicts of grazing in riparian areas where grazing currently exists. The Plan does not allow additional grazing in riparian areas not already within a grazing allotment.

B Forestwide Standard Nos. 17 and 28 provide for analyses and project designs to protect watersheds and the aquatic ecosystem.

C Roads do provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time, noxious weeds are being found in Wildernesses or other undisturbed sites. The basic problem in noxious weed management is a lack of a good understanding of the autecological attributes of them or the synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work done todate has been related to cereal crop and range or pasture land control with limited emphasis on understanding the basic life cycle of the plant.

While herbicide use may occur under special conditions, the topography and vegetation cover on the Lolo make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot and Flathead forests. Preliminary results of the study suggest a number of management practices that may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.

Lolo DEIS p. 2 of 2

III-E-1 (p.2)

O 1302 should be classified H rather than F. The obvious value of this unit is wildlife and high quality recreation. A road connecting the head of Cregon Creek with Gold Creek on the Idaho side is unexceptable. It is difficult to think of another reason for not classifying this unit Wilderness. F

O1803 and O 1809: To protect wildlife values any roads essential to achieve management objectives should never be opened to public use. Existing access is adequate. G

O 1790 and O 1791 are both large elk factories of long standing with adequate access. All unroaded portions should be in category H. H

O 1792: If this unit is roaded and logged all penetrating roads should be closed as soon as they are not needed for harvesting and regeneration. They should not be opened to the public. I

O 1784: Managing this unit as Wilderness instead of cutting it into many small units of B, C, D and F would avoid potential confrontations. J

O 1786: The dominant value in this unit precludes any roading. It should be classified F or H. K

O 1805: Allocations of F and H are a good compromise for the Lolo Creek additionto the Selway Bitterroot Wilderness. L

O 1808: This unit should be added to the Wilderness. F recognizes the values but H will increase the security of these values. M

X 1202 and X 1814: F is a satisfactory classification for these units. Wildlife values and hunting opportunities will be protected. N

O 1806: These allocations are good recognition of the values but it would be better if those units classified B, F, and G contiguous to the Bob Marshall were changed to H. All possibility of roads being extended into these units should be avoided. O

Thank you for the opportunity to participate in the planning process.

Sincerely,

Donald Aldrich

Donald Aldrich

FOREST SERVICE RESPONSE CONTINUED

D Ward Eagle (x1220) [c 373] and Sheep Mountain-State Line (01799) could be managed under f or h; however, the Forest Service will continue to recommend roadless management in the Final EIS (FEIS).

E In response to the Great Burn (01301), the Irish Basin-Lower Cache Creek area is recommended for wilderness.

F Meadow Creek-Upper North Fork (01302), with its wildlife and recreation values, can best be managed for these resources under Management Emphasis f.

G The Burdette Creek area (01803) management direction would allow road construction only to serve a fire or prescribed wildlife habitat burn. Any such road would be closed to public use.

The Garden Point area (01809) management direction allows road construction. Road access from Deer Peak to Garden Point has existed for many years; it is planned that this will remain open. New roads on other locations will be closed.

H Cherry Peak (01791) and Mount Bushnell (01790) are important wildlife habitat areas. Cherry Peak is proposed largely for roadless management which gives protection and flexibility in wildlife habitat management. A variety of management directions are proposed for the Mount Bushnell area, with the key wildlife areas being managed for that resource. Wilderness designation is not necessarily the best long-term management for wildlife habitat.

I Gilt Edge-Silver Creek (01792) - As part of the Forest Plan, new roads will be closed except for those periods of time when they are being used for their intended purpose, i.e., during the term of a timber harvest contract.

J The FEIS does not recommend wilderness designation for the Cube Iron-Silcox area (01784); 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

K Teepee-Spring Creek (01786) will not be recommended for wilderness or roadless management because of its history of mining activity, indefinite boundaries and moderate value for recreation or wilderness.

L A portion of Lolo Creek (01805) is recommended for wilderness in the FEIS. This is a change from the draft statement.

M In the Stony Mountain area (01808), 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

N Petty Mountain (x1202) and Deep Creek (x1814) - The preferred alternative calls for Management Emphasis f.

O In Bear-Marshall-Scapegoat-Swan, the Forest Service feels the minor areas designated for Management Emphasis b, f and g are appropriate.

M-E-2
(p.1 of 5)

THE GREAT BEAR FOUNDATION
P.O. Box 2699
Missoula, MT 59806
(406) 271-3009

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONTANA
MAY 30 1985
RECEIVED

May 29, 1985

Mr. Orville Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, MT 59801

RE: Lolo Forest Revised Draft Plan and DEIS

Dear Orville:

Of the alternatives displayed for public review, Alternative B would best promote A
the conservation of black bears and grizzly bears, because of the (relative) moder- B
ation in roadbuilding under this alternative. The continued security of black bears
and grizzly bears would be improved if you recommended Cube Iron/Silcox, Stony
Mountain and Lolo Peak as wilderness and if you recommended for wilderness designa- C
tion the Swan Front, Monture and Great Burn areas recommended by the Montana Wild-
lands Coalition.

Wilderness is indispensible and irreplaceable for grizzly bears because it is about the only place where they can be assurred long-term security; Where roads exist, grizzlies become increasingly vulnerable to gunfire from hunters, poachers and vandals who shoot at anything in sight.

You should explicitly state in the Final Plan and EIS that road construction and timber removal may affect the grizzly to the extent that road construction and timber removal heighten the bear's vulnerability to disturbance, harassment and killing. You should refer to Bonnie Blanchard's data on grizzly use of timber, and you should refer also to information presented by Jon Almac, Bruce McClelland and Dave Mattson, et al at the recent Grizzly Bear Habitat Symposium; The high importance of timber was well demonstrated in each case. The Final Plan/EIS should explicity acknowledge the importance of timber to grizzlies, and the jeopardy to grizzlies when roads and timber removal modify the bear's habitat. B

The Lolo National Forest's cooperation in management of the Swan Valley Grizzly Bear Travel Corridor is an example of agency-corporate cooperation with potential to minimize adverse affects on the grizzly and its environment. You and the industry deserve commendation for this effort. This effort nevertheless can and should be improved by widening the existing corridor management boundary, and by managing other areas of the Swan Valley as grizzly travel corridors. D To do so would help prevent fragmentation of the Northern Continental Divide Grizzly Bear Ecosystem that would occur if the Mission Mountains were to become isolated from the rest of NCDGBE. Your plan for management of the Swan Valley is thus extremely important because it may affect the NCDGBE population as a whole and not "just a few bears."

Board of Directors
Arnold Bolle • William Callaghan • Craig Campbell • Lance Olsen • Frank Ponikvar • Phil Tawney • Mart Williams

FOREST SERVICE RESPONSE

M-E-2

A Alternative b minimizes human-caused mortality, which is a significant problem for grizzly bears. However, the selected alternative, Alternative d, provides comparable emphasis on protection for the bears while also allowing habitat enhancement when it can be demonstrated that such enhancement would be desirable for the bear.

B Road building and other development can constitute significant risks to the grizzly bear. That single fact has driven the rewording of much of the Final EIS (FEIS) and Forest Plan to clearly direct that other Forest uses will be subservient to the needs of the grizzly bear within essential habitat. This increased emphasis is stated in Management Areas (MA's) 20 and 20a in the Forest Plan and in the FEIS. The references mentioned regarding grizzly use of timber are included in research and data files and are used in project level planning to insure that cover, as well as security, food components and other facets of grizzly bear management are considered.

C The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and wilderness additions to the Selway/Bitterroot and Scapegoat. In addition, 180,700 acres are designated for roadless management.

The FEIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

The FEIS recommends a portion of Lolo Creek for wilderness designation. This is a change from the draft statement.

On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres, respectively, for the Lolo Forest.

D Biologically, a wider travel corridor would be very desirable for the grizzly bear. Unfortunately, subdivisions and large blocks of private land preclude that option on the Lolo.

M-E-2

Because subdivision of private land is a limiting factor for the grizzly bear, subdivision can force the bear to greater reliance on national forest land. The consequence is that subdivision thus becomes a limiting factor for the Forest Service, because the agency's own management options may be restricted in order to protect water, soils, range, fish and wildlife. Land exchanges, conservation easements or other arrangements that preclude subdivision are thus very important in conservation of the grizzly bear and will be an essential part of your duty in the Swan Valley and other areas where privately owned grizzly habitat abuts or is intermingled with public land managed by the Lolo National Forest. E

Mitigation and monitoring procedures need to be more articulated and less vaguely defined in the Final Plan/EIS than they are in the Revised Draft Plan/DEIS. Further, mitigation and monitoring funds should be in hand prior to your taking any action that requires either mitigation or monitoring or both. As things stand now, you could take an action only to find later that Congress will not appropriate the funds required for mitigation and monitoring. As you know, Congress is in a cost-cutting mood and uncertainty exists about future funds. Further, the President evidently intends to continue his efforts to cut the federal work force, which raises uncertainty about your future ability to monitor the effects of actions that may affect the grizzly. Given these significant uncertainties, it would be risky to proceed with actions that require mitigation and/or monitoring until and unless the funds for monitoring and mitigating were already available for those purposes. F

Similarly, it will be essential that your actions can be moderated or halted prior to completion, if mitigation fails its purpose or if monitoring reveals unacceptable damage. To do otherwise would probably be a circumvention of the intent of mitigation and monitoring. The Final Plan/EIS should describe the feedback link, from mitigation and monitoring, to the action itself; Provisions for modifying an action or, if necessary, halting it, should be spelled out. G

As a final comment on mitigation and monitoring, these measures should be financed out of that part of your budget (e.g., timber) that is the impetus for the action requiring them. For, without actions such as road construction or timber sales, there would not be need for the monitoring and/or mitigation, and thus no cost incurred. Of course, prevention of adverse effects is always superior to merely mitigating them. H

As you know, the Fish and Wildlife Service is revising the Grizzly Bear Recovery Plan. At the same time, the State of Montana is preparing a management plan, and both agencies will be looking at revised boundaries for management toward the grizzly's recovery from threatened status. You should avoid reliance on the dated management boundaries in the current Recovery Plan and utilize boundaries suggested by Montana, and by FWS revisions, as you plan actions in the Cabinet-Yaak Grizzly Bear Ecosystem, and Northern Continental Divide Grizzly Bear Ecosystem. I

In roadless areas within the new ecosystem management boundaries, NSO stipulations should be included in new and re-issued minerals leases. J

I want to close with discussion of two factors, at some length and in some detail. First, I want to discuss the "environment vs. economy" fallacy as it applies to the Lolo National Forest timber program. Second, I will discuss a possible link between

FOREST SERVICE RESPONSE CONTINUED

E The Forest Service is required by law to consult formally on all land exchanges that involve grizzly bears and other Threatened and Endangered species. It is also the intent of the Forest to take an active role with other agencies to work together to resolve allocation, subdivision and other land use conflicts in grizzly bear habitat.

F The use of the word "mitigation" is interpreted by the Forest to mean the requiring of contractual restrictions (seasonal logging restrictions, road closures, etc.) needed to avoid adverse impacts on the grizzly bear. Thus, projects have "built-in mitigation." The management objectives in areas occurring within MA 20 preclude intentionally creating an adverse impact on the grizzly bear. Regarding monitoring, the Forest agrees that the funding for projects and monitoring should be interrelated, and that one should not be funded without the other. The Forest's funding process is based on that concept.

G The Forest conducts extensive vegetative monitoring at the project level to insure that vegetative objectives to protect or benefit the grizzly bear are indeed accomplished. In addition, a wildlife biologist establishes the vegetation manipulative objectives for all projects within essential habitat, as required in Forestwide Standard No. 24.

H Mitigation and monitoring are funded from that activity necessitating the need, and budgets planned accordingly. Also, the Forest Plan monitoring plan (Chapter V, Section D) states: "If monitoring can not be accomplished in accordance with this plan, management activities will be redesigned, rescheduled or dropped and an amendment will be issued. If any event causes a significant change in expected output, a revision will be completed."

I The Threatened and Endangered essential habitat boundaries, including those for the grizzly, have remained relatively dynamic. Boundaries are changed as soon as inventory and research results indicate the need. A significant change could result in an amendment to the Forest Plan.

J In Mountain States Legal Foundation v. Watt (1980), Federal Judge Bremmer declared that the Forest Service may not arbitrarily put blanket No Surface Occupancy (NSO) stipulations on roadless lands. During the formulation of the Forestwide environmental assessment for oil and gas leasing, the Lolo resource specialists identified a number of special stipulations which would be added to leases issued in roadless areas to protect/mitigate any impacts. This listing of stipulations is included in MA 11 as part of the direction for managing the Forest's roadless lands.

National direction prohibits NSO designations unless that is the only way to resolve a conflict between the grizzly bear and minerals development. In many of the Management Situation 1 and 2 areas, conflicts can be resolved by timing and other restrictions. Hence, in many situations the needs of the grizzly bear are met, while still allowing limited mining and oil and gas activity.

M-E-2

timber removal and drought. Both factors may have direct and indirect importance to grizzly bear conservation.

First, the grizzly bear is sometimes perceived as inimical to forest industry jobs; Timber that is not available for cutting because of need to protect the bear can create local resentment. However, jobs in the timber industry are 1) not threatened by the bear and are 2) not necessarily linked to availability of timber. You should include in the Final Plan and EIS the information in Keegan, C.E. and Jackson. T.P. "The Future of Montana's Forest Products Industry," Montana Business Quarterly, Autumn 1984, Vol. 22, No.3, pp 2-5.

K

Past management of the Lolo National Forest has depleted the majority of old growth timber, leaving skimpier timber available for cutting; Past management will now cause the loss of 1000 to 3000 forest industry jobs, and will cause loss of $20 million to $60 million from the state's economy, according to Keegan and Jackson.

Keegan and Jackson state that "declining forest industry employment brought about by a changing industry structure necessary to process smaller diameter trees" could have a "large impact" on the economic health of the state. It certainly could, for, as the authors point out, the forest products industry accounts for half the economic base of the western portion of the state.

Keegan and Jackson say "If an industry comprises a large portion of the earnings in basic industries and there is a large change in labor income in that industry, there will be substantial impact on the area economy, including the derivative sector." It is ironic that the Forest Service has so often justified its timber sales on the grounds of safeguarding the stability of local communities, when a $20 million to $60 million economic shortfall looms as a result. It is doubly ironic that the bear should be perceived as inimical to economic opportunity, when the problem runs much deeper, in what appears to be a boom-bust approach to forest economics. This approach can be summarized in a single word: deforestation.

Keegan and Jackson say "There is a diminishing supply of large-diameter trees... Because there are fewer large-diameter trees available, Montana's forest products industry must shift to an emphasis on small-diameter timber...If the large-log mills are replaced it will likely be by small-log facilities...This shoft could have a major impact on wester Montana's economy...The impact of this shift on employment could be very large."

This economic impact is due to "the way timber is processed." The declining stands of old growth and the shift to skimpier timber means that mechanization will replace manpower. This shift will affect the economy whether or not timber cutting is moderated in protection of the grizzly and other wildlife.

Keegan and Jackson say, "From 1960 to 1980" the timber economy enjoyed an increase "in excess of 1000 additional production jobs in Montana with no increase in timber harvest" (emphasis added). Again, the charge was related to technology: how timber is processed.

Past Forest Service actions have led to a declining supply of old growth timber and have contributed to conditions that appear about to precipitat a $20 million to $60 million impact on the Montana economy. At the same time, Forest Service

FOREST SERVICE RESPONSE CONTINUED

K As wild forest lands are converted to regulated management, rotation periods are shorter and average diameters are smaller than in old growth stands. Shorter rotations based on the culmination of mean annual increment have a greater positive impact on jobs and income because there is a greater total volume of timber available in shorter periods of time. This greater volume is derived from harvesting two or more rotations of faster growing trees per single rotation of old growth, and producing greater volumes per acre as a result of intensive management such as commercial thinning. The conversion of old growth to managed stands is projected to take approximately 70 years under the proposed Forest Plan.

The proposed alternative projects an annual increase in local employment and income of 344 jobs and $5.6 million, respectively. This increase is primarily due to changes in timber outputs and Forest expenditures. The employment and income values include direct, indirect and induced effects. The Lolo's responsibility towards maintaining community stability relative to the timber industry is limited to supplying raw material needed by the mills to maintain operations, and not to prescribing how the industry elects to process that material and with what mix of labor and machinery.

M-E-2

actions adversely affected wildlife including grizzly bears, as evidenced by grizzlies shot from roads built into grizzly habitat; Five grizzlies were shot from roads in the spring of 1983. All of this was made possible courtesy of the American taxpayer. Is this the mission of the Forest Service? Had past Forest Service actions been more moderate, the future would be more bright for the Montana economy as well as for the grizzly bear. Now, unfortunately, the economy and the bear are both backed into a corner.

There's no sense crying over spilt milk; The best timber from the most accessible land is gone and will not be able to serve today's needs; But where does your plan for the Lolo National Forest put us in the future?

To an appreciable extent, your plan is a plan for management geared to production of small-diameter trees. Your plan thus will, to that same extent, promote unemployment for a long time to come. It is not a plan to promote recovery of an old growth forest or recovery of the economic opportunity an old growth forest can provide. Further, it involves additional road building into wildlife habitat. In sum, it repeats adverse consequences of the past and puts the Forest Service in a role somewhat unlike the role of a "good neighbor." To the extent that these impressions are correct, violations of NFMA may be implicit or explicit to this trend. It would be ironic indeed if it proves to be the Forest Service which has been inimical to the economy and the environment when the economy and the environment could have been compatible.

VI-37

The second matter I will discuss in some detail is the possible relation between timber removal and drought. This relation has only been recognized in recent years. In sum, forests seed the clouds.

See, for example, Natural History (a publication of the American Museum of Natural History) April 1985, Vol. 94, No. 4. This issue includes a "State of the Earth 1985" report of several unnumbered pages. See "Is human activity causing global climate change?" for discussion of deforestation (i.e., timber removal) and drought.

The report cites research evidence that three fourths of the rainfall on Brazilian forests is returned to the atmosphere via evaporation and transpiration of plants. The remainder is runoff. Of the total amount returned to the atmosphere, only one-fourth is returned directly, via evaporation. The remaining three-fourths of the moisture returned to the atmosphere is returned via transpiration of plants. This distribution of moisture changes radically after deforestation.

When the land is deforested, three-fourths of the rainfall becomes runoff. Only one-fourth is returned to the atmosphere. The net effect is lower average rainfall. The same general scenario is now recognized as a contributor to drought in North Africa.

Such effects are believed to be more evident at points distant from seacoasts. The report says "Rainfall in the region is accordingly reduced, as the atmosphere holds less returned moisture that can become rain later in the cycle. The more distant from the coast, the more an area depends on evaporation for the recharge of rain clouds." The author concludes that "knowing what we do about the extent of deforestation, overgrazing, and soil degradation during the past generation and about the way the hydrologic cycle works, we should not be surprised by changing climate."

M-E-2

I mention this possible relation between timber removal and drought because I think you should seek information on it. It is fairly clear that increased runoff can occur from timber removal, and that soil erosion, heightened flood risk, stream siltation and declining fish populations result from that increase; These effects are well known and documented. The additional risk of potential for shutting off the rain raises significant uncertainty and thereby raises specific responsibilities assigned to you under NEPA. Trees act as pumps; cutting down the pumps would certainly alter the hydrologic cycle to some extent and that alteration may have major effect that should be evaluated and displayed for public review in the EIS. Drought conditions are adverse for agriculture, fire control, fish, and wildlife including bears. L

In review, the Great Bear Foundation is very concerned about road access and timber removal proposed for grizzly habitat and is most interested in seeing the Forest Service employ measures to protect privately owned grizzly habitat from subdivision. M These problems raise significant uncertainty, as do questions about mitigation and monitoring. It will also be very important for the Forest Service to keep abreast of Montana and Recovery Plan boundaries for grizzly ecosystems, and to ensure that the grizzly bear is not falsely perceived as inimical to employment opportunity when to encourage such a view would jeopardize the bear as well as the public's potential for awareness of what actually is and is not the seat of projected unemployment. The potential relation between timber removal and drought appears to be well-studied enough so that you could find out more about it, and could give it due consideration in the EIS. NEPA also requires a "worst-case scenario" where significant uncertainty exists. Several such uncertainties are described above.

Thank you for this opportunity to study and comment on the Revised Draft Lolo Plan and DEIS. You've put a lot of work and thought into them. We look forward to reviewing the Final Plan and EIS.

Sincerely,

Lance Olsen
President

cc: Senator Max Baucus (for information only)
Congressman Pat Williams (for information only)
Tom Coston
IGBC
Arnold Bolle
John Gatchall
Tom France
Wayne Brewster

sc

FOREST SERVICE RESPONSE CONTINUED

L For 75 years, Forest Service research has studied the effect of vegetation removal on the hydrologic cycle. The relationship between forests and water has been recognized for an even longer period of time. The founding legislation that established the Forest Service cited "providing favorable conditions of water flow" as a primary purpose for reserving National Forests.

Historically, wildfires consumed thousands of acres of trees annually, which really is no different than harvesting thousands of acres of trees today. Since areas are reforested very rapidly, there may not be any "change" over time to a large geographic area. On the Lolo, a Water Yield Analysis utilizing the Forest's Vegetation Manipulation Guidelines is performed for all timber harvest projects.

All timber harvest projects are evaluated for their effect on runoff increases and sediment yield to streams. Refer to Forestwide Standard Nos. 15, 16, 17 and 19.

M The Lolo Forest is responsible for all resources associated with the National Forest. Timber will be harvested in wildlife areas, requiring additional roads. However, timber harvest in wildlife areas is beneficial when properly carried out, and road management will protect the wildlife resource. Refer to Forestwide Standard Nos. 21, 22, 23, 24, 25, 26, 28 and 52, which protect wildlife from road and timber harvest impacts.

COMPOSITE PUBLIC COMMENT

WA-E-3-Spokane Audubon Society
M-E-4-Great Burn Study Group
OR-N-402-John Scott
WA-E-7-Sierra Club
WA-E-8-Inland Empire Big-game Council
WA-N-399-Pam Lyons
WA-N-400-John Napiar
WA-N-411-John Simmons

The individuals and groups above expressed similar thoughts in that they support a wilderness status classification for the 15,000 acres of Cache Creek and the Irish Basin area in the Great Burn/Hoodoo as proposed.

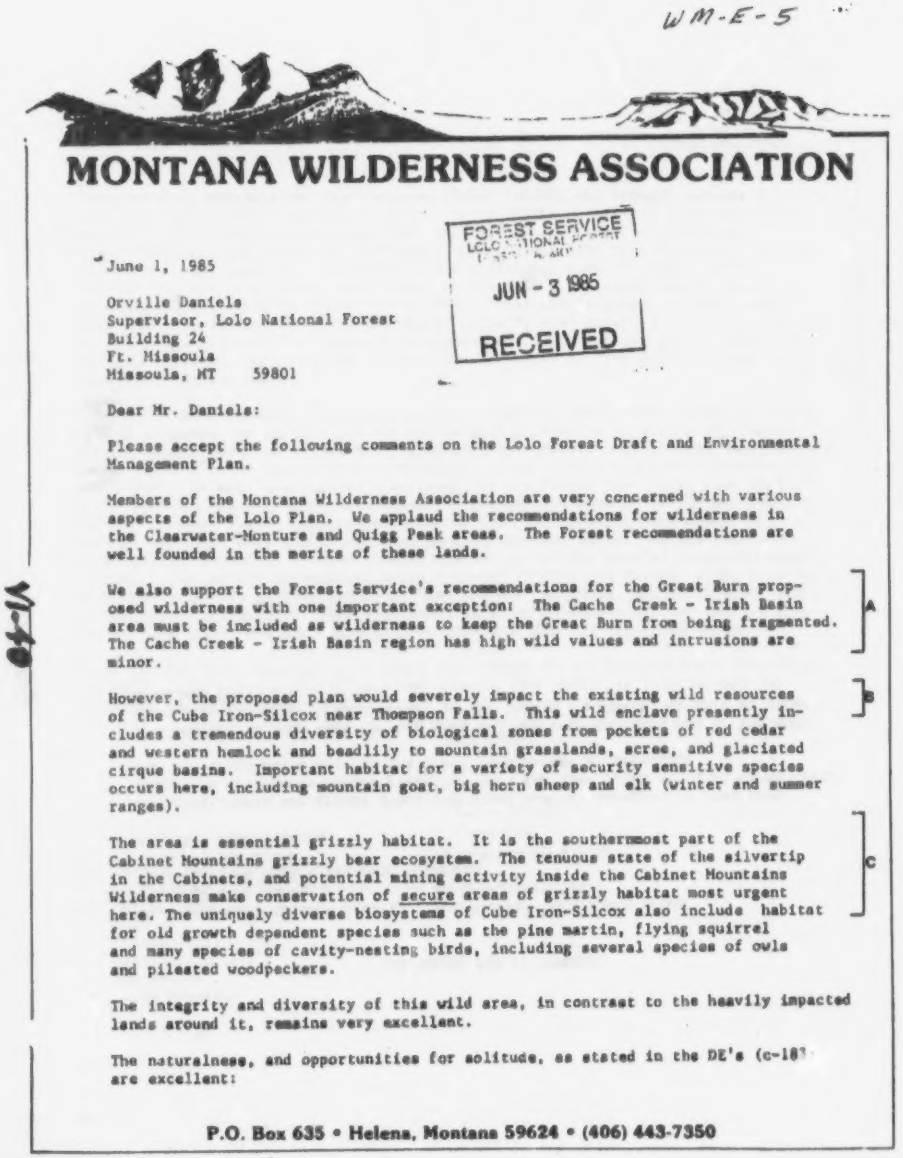
The habitat is important for big game and the area contains one of the most sensitive fisheries, Kelly Creek, in the inland Northwest, as well as other area waters.

FOREST SERVICE RESPONSE

WA-E-3 M-E-4 OR-N-402 WA-E-7 WA-E-8 WA-N-399 WA-N-400 WA-N-411

The Great Burn/Hoodoo, including the Irish Basin-lower Cache Creek area, is recommended for wilderness in the Final EIS.

WM-E-5



MONTANA WILDERNESS ASSOCIATION

FOREST SERVICE
LOLO NATIONAL FOREST
JUN - 3 1985
RECEIVED

June 1, 1985

Orville Daniels
Supervisor, Lolo National Forest
Building 24
Ft. Missoula
Missoula, MT 59801

Dear Mr. Daniels:

Please accept the following comments on the Lolo Forest Draft and Environmental Management Plan.

Members of the Montana Wilderness Association are very concerned with various aspects of the Lolo Plan. We applaud the recommendations for wilderness in the Clearwater-Monture and Quigg Peak areas. The Forest recommendations are well founded in the merits of these lands.

We also support the Forest Service's recommendations for the Great Burn proposed wilderness with one important exception: The Cache Creek - Irish Basin area must be included as wilderness to keep the Great Burn from being fragmented. The Cache Creek - Irish Basin region has high wild values and intrusions are minor. A

However, the proposed plan would severely impact the existing wild resources of the Cube Iron-Silcox near Thompson Falls. B This wild enclave presently includes a tremendous diversity of biological zones from pockets of red cedar and western hemlock and beadlily to mountain grasslands, scree, and glaciated cirque basins. Important habitat for a variety of security sensitive species occurs here, including mountain goat, big horn sheep and elk (winter and summer ranges).

The area is essential grizzly habitat. It is the southernmost part of the Cabinet Mountains grizzly bear ecosystem. The tenuous state of the silvertip in the Cabinets, and potential mining activity inside the Cabinet Mountains Wilderness make conservation of secure areas of grizzly habitat most urgent here. C The uniquely diverse biosystems of Cube Iron-Silcox also include habitat for old growth dependent species such as the pine martin, flying squirrel and many species of cavity-nesting birds, including several species of owls and pileated woodpeckers.

The integrity and diversity of this wild area, in contrast to the heavily impacted lands around it, remains very excellent.

The naturalness, and opportunities for solitude, as stated in the DE's (c-18

are excellent:

P.O. Box 635 • Helena, Montana 59624 • (406) 443-7350

FOREST SERVICE RESPONSE

WM-E-5

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B The FEIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

C It is agreed that solitude and security are essential to the grizzly bear. Much of the grizzly bear's decline has come about because of a loss of these attributes. All Management Areas (MA's) occurring within essential habitat are based on maintaining high levels of cover and security, with a minimum of human harrassment. However, many grizzly bear foods occur only in early successional stages. In the past, these foods were readily available, due to abundant wildfires. With the absence of wildfires, it has become apparent that some type of vegetative manipulation will be needed on some acres. For example, a grizzly bear habitat inventory conducted by Debra A. Tirmenstein in the Rattlesnake drainage in 1982, demonstrated that approximately 25 percent of all available feeding components occurred in areas logged in the early 1960's. Evidence of a female grizzly bear and cub were observed in this same area in 1984 indicating that use was being made of the area. Hence, a Management Area was designed (MA 20 and 20a) to manipulate vegetation by fire and/or logging. Only certain sites have the potential to produce grizzly bear foods. By analyzing potential vegetative responses within essential grizzly bear habitat, it was determined that roughly 64,000 acres out of the total of 321,000 acres of essential habitat might benefit from vegetative manipulation, from the bear food standpoint. Manipulation done within this 64,000 acres must be designed to be beneficial to the bear, including the maintenance of security and minimization of human-caused mortality. While in some cases, timber harvest may occur, it is clear in the Forest Plan, objectives 1 & 2, that this product is of secondary value and is subservient to the needs of the bear.

D To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. The economic analysis in the Forest Plan also considers long-term management for the entire Forest rather than individual sales.

Helicopter logging is a specialized form of harvesting that is used only in areas with high value timber than cannot be harvested by conventional systems, due to topographic constraints or especially sensitive resources. The same economic analysis is required for helicopter sales as for all other sales on the Lolo.

WM-E-5

> "There has been little human influence on the natural integrity of the area ...
>
> The size of the area offers visitors the opportunity to experience a sense of being alone ... Primitive recreation opportunities are high due to the long distance from the perimeter to the core area."

The Cube Iron-Silcox is today used as wilderness, according to the DEIS:

> "Current recreational activities in the area include fishing the many lakes and streams , hiking, camping, mountain climbing, big game and grouse hunting, and berrypicking."

Yet the proposed plan would severaly damage these existing attributes. Prescriptions for grizzly habitat "enhancement",logging and helicopter logging planned for the area threaten this outstanding wild enclave. The popularity of this area will likely make these actions very controversial.

Helicopter sales in western Montana typically produce only one bidder as small outfits cannot bid. Stumpage receipts are generally very low due to lack of competition and high cost of heli-logging on such steep fragile terrain.

However, the costs of preparing and administering such sales can be quite hihg, reforestation problems are common and very expensive to correct.

It is likely that the proposed logging is not economically sound, would result in a one-shot timber mining operation due to the difficulty of terrain and difficult reforestation problems.

D

The Lolo Forest has sold, on the average, only about half of the timber it has offered for sale in recent years. There is no need to push these steep. difficult lands with outstanding wilderness attributes into the timber base..

E

The theory that grizzlies need logging to enhance existing habitat is simply not founded in fact. On the contrary, one point most recognized authorities on grizzlies do agree on is that the critters need security:

> "Space and solitude are essential for maintaining grizzly bears in perpetuity... Critical non-wilderness habitat... must be typemapped and where feasible, reclassified as wilderness. In non-wilderness areas, grizzlies have but short-term security; intensified resource use eventually will displace them."
>
> Dr. John Craighead
> Western Wildlands, 1982

It is difficult to understand what solid basis the Lolo Forest has for proposed logging to improve grizzly habitat. Please explain how this area of essential

C

WM-E-5

grizzly habitat would benefit from the proposed logging and subsequent decrease in existing cover and security.

The Montana Department of Health and Environmental Sciences Water Quality Bureau also takes note of serious water quality problems in the West Fork of the Thompson River, downstream from previous logging activities: In their Montana Water Quality Report, 1982, the Bureau notes the presence of "heavy total suspended solids problems caused by Forest practices ." The Thompson River, as you are aware, is one of the most important trout waters in northwestern Montana. The proposed logging, yet further up the headwaters of the West Fork would take place in much steeper ground with unstable soils. This would likely add more sediments to already-existing water quality problems in the forest for which the Forest is responsible. F

The plan proposes uneconomic logging with no demonstrated need for either wildlife or market. The proposed activities would severly damage the biological integrity and security of this wild area, degrade existing wilderness, wildlife and recreational resources and aggravate rather than correct existing water quality problems. D

More sensible opportunities for timber harvest exist elsewhere.

We ask you to consider the existing values in the wild Cube Iron-Silcox and re-examine whether there is really a need to manage this tough country for timber that could not otherwise be satisfied.

Members of the Montana Wilderness Association wholeheartedly support this unique area for wilderness and believe a closer inspection of existing values and tradeoffs will lead the staff of the Lolo Forest to the same conclusion. We urge you to recommend the wild Cube Iron-Silcox for wilderness. B

We also ask that you recommend the Stony Mountain (Lolo side), or Dome Shaped Mountain, for wilderness. The draft plan verifies the lack of conflicts with this area, and it is difficult to understand why the agency would not recommend it, to fully protect the wildlife and Rock Creek watershed. G

Two other concerns have been brought forth by members of MWA:

The draft plan should fully endorse the Rock Creek agreement and fund complete up-to-date water quality monitoring for Rock Creek and the entire watershed of the Lolo Forest. H

The Lolo Forest already has too many roads in many areas. Spotted knapweed and leafy spurge thrive on the disturbed new roadbeds and MWA joins other groups in expressing our deep concern for actions which would aid the spread of these noxious foreign weeds. I

Damage to wildlife habitat especially elk, grizzly and goat, from excess roading is documented in many studies (Lyon, Chadwick, Craighead, Martinka, et.al).

Roads also become a major nonpoint source of sediments that are carried into

FOREST SERVICE RESPONSE CONTINUED

E The Forest Plan has established a Forest-wide maximum allowable timber sale quantity of 1220 MMBF for the next 10 years. It is possible to adjust the volume offered each year to meet current demands. Beginning in 1980, the timber market collapsed as a result of the recession in the national economy. The five-year average volume sold on the Forest from 1980-1984 was about 60 MMBF/year, (60% of the offered volume). As a result of the recent low demand, the Forest has reduced its offered volume by 20 percent, to 80 MMBF per year. The inability of the Forest to sell sales in recent years is considered to be a result of recession in the national economy rather than an indication of long-term market demand.

F The data reported by the Water Quality Bureau in their 1982 report was provided by the Lolo National Forest. Any projects proposed in the West Fork of the Thompson River will be evaluated thoroughly for their possible impact on the main Thompson River as well as the West Fork itself. Forestwide Standard No. 28 commits the Forest to conducting only those land management practices that will result in "far from permanent or long-term unnatural imposed stress."

Sensitive soil areas in the West Fork of the Thompson River are well known. Such areas, if not developed properly, can be major contributors of sediment to stream courses and can reduce the productivity of the land. Because of the nature of these areas, productivity is very high and they are some of the better growing sites on the Forest. Due to this situation, areas with sensitive soils are treated with a set of mitigation measures that considers the characteristics of each soil and attempts to minimize the particular hazard of each soil [Best Management Practices (BMP's)]. By using this kind of approach, these sensitive areas can be developed with a minimum amount of sediment production, thus allowing us to manage the highly productive sites within their capability. This kind of management provides a better economic payback in the long run and still protects the environment. The Land System Inventory (LSI) is an important part of the project planning process and is presently in use.

G In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

H The Forest is committed to monitoring each sale or road proposed for Rock Creek prior to, during and after activity with state-of-the-art sediment-related monitoring procedures. The Rock Creek Agreement is included in Chapter IV of the Forest Plan.

I Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The amount of roads proposed is necessary to provide the timber outputs projected in the Plan. The Plan requires a number of actions, such as road closures and minimum road standards, to mitigate the adverse consequences associated with road building (see Forestwide Standard Nos. 16 and 49-51). The Plan also outlines an active monitoring program to ensure the protection of other resources.

WM-E-5

page 4

streams and rivers. We ask that the final LoloForest Plan consider these incontrovertible aspects of roading and balance these considerations with need for access. The proposed increases in roading are clearly out of line with conserving wildlife habitat, water quality, checking the spread of noxious weeds and public sentiment. It is time for a new policy on roads; we believe 5100 miles of roads should be more than enough . I

We recognize access roads will be needed to cut timber and suggest not a moratorium on timber cutting,but suggest a freeze on total road mileage at approximately present levels. J We suggest there may be existing roads that can be outsloped and revegetated, and that minimum access to timber stands become a new rule of thumb. K

Thank you for this opportunity to comment on the Lolo Plan.

Sincerely,

Dick Tenney

Dick Tenney
President, MWA

VI-43

cc: Regional Forest, Tom Coston
Senator Max Baucus
Senator John Melcher
Rep. Pat Williams
Rep. Ron Marlenee

FOREST SERVICE RESPONSE CONTINUED

I Roads do provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time, noxious weeds are being found in Wildernesses or other undisturbed sites. The basic problem in noxious weed management is a lack of a good understanding of the autecological attributes of them or the synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work done todate has been related to cereal crop and range or pasture land control with limited emphasis on understanding the basic life cycle of the plant.

While herbicide use may occur under special conditions, the topography and vegetation cover on the Lolo make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot and Flathead forests. Preliminary results of the study suggest a number of management practices that may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.

J Future technology may allow for reducing projected road mileage. There is a concern that road construction not be excessive to the needs of Forest management. Most new roads access areas that are not harvested in the first sale, and therefore must be perpetuated for future use. Access to timber stands will be the minimum necessary for economical harvest and management. Existing roads that are no longer needed will be revegetated.

K Existing roads are closed when not needed, and many have grass, brush and trees growing in them now. However, due to type of cutting and limitations on the size of cutting units, periodic re-entries are needed on many roads. This requires retaining the road prism, and prevents establishment of sizable vegetation.

WM-E-5

MONTANA WILDERNESS ASSOCIATION

May 31, 1985

Orville Daniels
Supervisor, Lolo NF
Bldg 24 Fort Missoula
Missoula, Mt. 59801

Dear Sir:

I would like to take this opportunity to comment on the Lolo Forest Plan. I support the formal comments submitted by the Mt. Wilderness Association.

I I strongly feel that increasing the logging roads to eventually 2.5 times the current level of roading will be detrimental to water quality, fisheries, and elk habitat.

L Fishing + hunting are vital Montana industries that we can not afford to sacrifice in the future. Tourism and the spin off services from skiing + fishing are the economic stability in many Montana communities. The National Forests must consider these economics concerns in its Forest Plan.

M I support no reduction in old growth. These is important for wildlife and birds.

B I support wilderness designation for the following areas: Cube Iron - Mt. Silcox for 40,000 acres;

A The Great Burn (Hoodoo) including the Cache Creek / Fish Basin;

G The Rock Creek Wildlands including Stony Mountain and Quigg Peak;

N The Clearwater-Monture; The Swan Front - Lolo portion; and Marshall Peak.

Thank You,

Grace Snyder
Vice-President, MWA
Box 112
Kila, Mt. 59920

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FOREST SERVICE RESPONSE CONTINUED

L The Forest recognizes the fact that recreational demand is increasing and that tourism is important to the economy of western Montana. Besides wilderness experiences, the Forest provides a wide range of roadless, motorized and developed recreation. The current capacity of developed sites exceeds expected demand for the first decade; therefore, no additional construction of facilities is planned. The Forest will encourage other agencies and private concessionaires to meet future demand.

M The Forest is committed to maintaining viable populations of old growth dependent species through allocation of MA 21 and wilderness and roadless designations.

N On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65, 560 acres, respectively, on the Lolo Forest.

The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

M-E-6
(1 of 14)

NATIONAL WILDLIFE FEDERATION

Northern Rockies Natural Resource Center
240 N. Higgins, Missoula, Montana 59801
(406) 721-6705

May 31, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
JUN - 1 1985
RECEIVED

Orville Daniels
Forest Supervisor
Lolo National Forest
Fort Missoula
Missoula, MT 59801

Dear Orville:

Enclosed are comments for the Lolo forest plan. These represent the combined efforts of the following organizations:

National Wildlife Federation
Montana Wildlife Federation
Montana Audobon Society
Westslope Chapter Trout Unlimited
Montana State Council Trout Unlimited

VI-45

We appreciate the opportunity to comment on the forest plan. As you know, we have serious reservations about the ambitious road building program envisioned by the plan. In addition, we support more extensive recommendations for wilderness than those reflected under the preferred alternative.

It is important that a continuing dialogue is maintained between the Forest Service and conservation organizations. We look forward to seeing the final plan and hope to see our recommendations and comments reflected in the final plan.

Sincerely,

Tom
Tom France
NWF

Jack T.
Jack Tuholske
Consultant

Chris Kronberg
Consultant

M-E-6
(2 of 14)

COMMENTS ON THE
LOLO NATIONAL FOREST
REVISED ENVIRONMENTAL IMPACT STATEMENT
AND FOREST PLAN

Submitted by:

West Slope Chapter Trout Unlimited
Montana Wildlife Federation
National Wildlife Federation
Montana Audubon Council

M-E-6
(3 of 14)

INTRODUCTION

We have found the Lolo Forest Plan to be the best in Region One. We realize the immense task facing the Forest Service in drafting management plans, but we think that the planning process represents an opportunity for the Forest Service to redirect its priorities to reflect the value of its aquatic resources. The Lolo Forest appears to be a leader in this respect.

We encourage the Forest Service to pursue this management direction, and to determine the effects of logging and grazing on fisheries and water quality. The concern we express in our comments is designed to support such a management direction in the forest plan, which we believe does not go far enough in its recognition of aquatic resources.

Our two main concerns are the increase in roads and the dearth of data on which the plan was based. We are pleased to see the development and use of models because of the ability to predict effects rather than only monitoring damage after it has commenced. As the Forest Service is well aware, sufficient data collection and field testing is necessary before models can be trusted to produce precise, accurate results.

The following are recommendations which we would like to see incorporated into the forest plan:

1. We want the Forest Service to adopt a non-degradation policy regarding water quality and fish habitat. Currently, the only situation in which this occurs is under wilderness designation.] A
2. Budget priorities should be shifted to data collection and model calibration regarding fisheries and water quality. We are amazed at the lack of data and wonder how the Forest Service can manage a resource it knows so little about. This is a region-wide problem.] B
3. The Forest Service should fund a study to determine the effects of its grazing allotment program on fish habitat and trout populations.] C
4. Granitics and equally erosive soils should be taken out of the timber base.] D
5. Use the Rock Creek monitoring and evaluation guidelines, and riparian prescriptions on a forest-wide basis. They are the best in the Region.] E

FOREST SERVICE RESPONSE

M-E-6

Your concerns are addressed according to the categories outlined in your letter.

A INTRODUCTION
1. One Forestwide goal and seven Forestwide Standards address water quality and fish habitat. Water quality will be maintained at the higher of the following two levels: 1) Federal and State water quality standards, or 2) existing water quality. Some temporary degradation is unavoidable during initial development activities. Therefore, absolute application of the non-degradation policy is unfeasible.

B 2. Monitoring budgets for water quality and fish habitat emphasize data collection and model calibration. Local data will produce a stronger data base and a more accurate model for predicting the consequences of proposed activities. If monitoring results indicate a significant error in Forest Plan predictions, the Plan will be modified. Modifications will follow the process outlined in Figure V.1, Decision Flow Diagram for Evaluating Variablility of Monitored Activities, found in Chapter V, Section D, of the Plan.

Drainages where sediment problems have been identified receive priority for project monitoring. When projects require monitoring and funds are not available, the project will be stopped or delayed.

C 3. The effects of poor grazing practices on riparian vegetation are well known. During the next 10 years the Forest will reevaluate all Range Allotment Management Plans. First priority for reevaluation will be given to the allotment with riparian/grazing problems. The new plans will address how to reduce or eliminate the problems.

D 4. Erosive soils can contribute excessive sediment to streams. However, some of these soils, such as granitics, are also very productive. Thus the Forest's approach is to develop productive sites while limiting sediment increase through project constraints, such as road surfacing.

Some erosive soil areas are already logged and roaded. Here, previous investments and road cost-share agreements may have committed the area to timber management. When projects occur in drainages where a sediment problem has been identified, constraints are designed to prevent increases in or reduce sediment.

E 5. In the Rock Creek chapter under "Monitoring and Evaluation," the monitoring program is described in detail. The same program requirements apply to other drainages on the Forest and are described in a more abbreviated form in Forest Plan Table V.1, Table of Forest Monitoring Requirements.

The riparian prescriptions, as defined in the Rock Creek chapter, have been applied to all Forest riparian areas. The application is accomplished through the forestwide management standards and the management goals and standards of Management Areas (MA's) 13 and 14.

M-E-6
(4 of 14)

GENERAL CONCERNS

The Lolo National Forest's two million acres harbor many resources that are valued by Montanans: big game hunting, grizzly bears and other endangered species, opportunities for hiking, backpacking, and cross-country skiing. The forest also supports a valuable cold water fishery of national significance - 96 lakes and 3,500 miles of streams including Rock Creek. The forest is an important contributor of clean water to several rivers, including the Clark Fork, Bitterroot and Blackfoot.

The DEIS and forest plan make a good faith effort to deal with trout and the effects of road construction and timber harvest on aquatic resources. However, as with other plans released thus far in Region One, the Lolo Forest has an unacceptably high level of road construction. In addition, the data on which the plans and its effects are based are insufficient. In light of the potentially serious problems caused by management acitivities, and the lack of data, we feel that the Lolo Forest should proceed cautiously with road construction. Forest planners must seek to collect baseline data and at the same time establish monitoring programs before damage occurs. The concern for Rock Creek should be extended to all riparian areas. F

The Forest Service takes a position of mitigating damage rather than preventing it. This problem stems mainly from the road bulding program. G

This management approach inherently implies that timber on the Lolo Forest has priority over aquatic resources, a position that we find indefensible. H

Aesthics of fishing are not discussed in the plan or DEIS. Increased sedimentation, runoff, fishing pressure, roading and grazing will degrade or decrease fishing opportunities. I

The National Environmental Policy Act requires analysis of all the impacts that reasonably and proximately flow from a proposed action. A clear connection J

FOREST SERVICE RESPONSE CONTINUED

GENERAL CONCERNS

- Management of commodity resources, such as timber, requires road development, and pristine conditions are disrupted. Although the miles of road needed to manage the Forest may appear to be great, major reductions in road needs have been accomplished in the past several years, and further reductions may come with new technology. Whereas 15 to 20 miles of road per section were required under the older jammer harvest systems, now 4 to 7 miles per section are required with the long line systems. Approximately 5440 miles of road are currently in place.

Resource considerations, such as those incorporated for water and riparian protection, tend to add to the miles of road needed for management. The natural systems are capable of absorbing some degree of change from the natural. In addition, through mitigation of impacts, many resources can be used while maintaining a high quality environment and not causing degradation to biological communities.

G The Forest's road planning includes incorporation of Best Management Practices (BMP). Prevention of impacts, which is the single most successful BMP, receives first priority in impact mitigation. It is only when conditions preclude the application of prevention that measures are taken to limit the negative effects of roads. Mitigation measures can be applied to road building to minimize the amount of sediment produced to levels that can be safely absorbed by the aquatic system. The mitigation involves: 1) making decisions based on the most reliable data and models available, 2) collecting data and improving models with coefficients calibrated for local conditions, 3) monitoring sensitive areas, and 4) modifying plans and activities when results are different from what was predicted and desired.

The preceding is a general response to general concerns. There are many specifics involved in land management designations and in the when, where and how of data collection. The Forest Plan is designed to meet many resource demands in a way that does not sacrifice one demand for another. To avoid resource damage the Forest exercizes caution through planning with the best available data and monitoring to determine if the planned and appropriate direction is being carried out.

H Timber does not have priority over aquatic resources or vice versa. The National Forests are operated under a series of laws requiring land management for multiple uses. Since each piece of land cannot meet all needs, land is designated so different areas emphasize different uses. For example, the waters and fish in Rock Creek receive special attention because the creek has been recognized as an important cold water fishery that is both productive and popular.

I Aesthetics of fishing and riparian areas are considered in Management Areas 13 and 14 of the Plan, which provides for meeting Visual Quality Objectives in riparian areas. There is further discussion in the Visual Quality section in Chapter II of the FEIS.

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exists between Forest Service management activities and off-forest effects. Given the significance of rivers and streams dependent on National Forest land, the Forest Service should attempt to determine downstream effects. In the event effects are serious, the preferred alternative might require alteration. The Forest Service and the Montana Department of Fish, Wildlife and Parks should develop a monitoring program to measure possible downstream effects. J

ROADS

The forest plan calls for a tripling of road mileage over the next twelve decades, from 4,200 miles to over 12,000 miles (DEIS, p. II-69). The scope of the Forest Serivce's ambitious road building program is set forth in Table IV-15, where the mileage constructed in each decade is identified. K Of special concern is the 90 miles per year of roads to be built with appropriated funds in the first decade (the Capital Investment Program). These roads are frequently used to access timber below cost sales. Considering the substantial backlog of unsold timber and depressed timber prices, we question why the Forest Service is undertaking such a major commitment to road building. L We also question whether the Forest Service will effectively "control 90 to 95% of potential sediment" through "specialized techniques in project design, layout, construction, and maintenance." (DEIS, p. IV-42). Such expectations are very optimistic given budget limitations.

The plan notes that "increasing sediment in streams has an adverse effect on trout popualtions" (DEIS, p. IV-43), but then states that the effects of sediment on overall populations is limited. The difference in trout populations between alternatives c and d do not support this contention. In Table IV-16, the preferred alternative (d) shows a population of 964,000 catchable trout for the first decade. Under Alternative c, 823,000 catchable trout are projected to exist at the end of the first decade. This is a substantial difference, especially in view of the fact that under Alternative c, 333 miles or road M

VI-49

FOREST SERVICE RESPONSE CONTINUED

J Just as one resource activity affects another resource activity, so do on-Forest activites have effects off-Forest. However, it is difficult to determine the off-Forest effects because private and other agency activities also contribute to these effects. The Forest will continue to encourage data collection off-Forest and work with the other agencies and adjacent landowners to maintain water quality. The Division of Forestry, Department of State Lands; the Water Quality Bureau, Department of Health and Environmental Sciences, and the Department of Fish, Wildlife and Parks are the State agencies responsible for data collection and evaluation of waters downstream from the Lolo National Forest. Off-Forest analysis is dependent on a strong data base related to private land activities and off-Forest stream conditions. Where downstream data is available, the impact of management activities on the off-Forest aquatic environment will be evaluated at the project level, as required by Forestwide Standard No. 28.

ROADS

K Most roads which could significantly impact the aquatic system have been built. These are the arterials and collector roads often located in the riparian zones. Most new construction will occur away from streams. Any roads located within riparian zones will have stringent construction standards.

L During the next 10 years, the Forest will potentially build 1400 miles of new road and access 175,842 roadless acres. Approximately one-third of these will be constructed with appropriated funds. The remainder will be constructed through timber sale contracts. The table has been modified to eliminate confusion and now only displays the amount of road to be constructed.

During the last 10 years the Forest did not harvest roadless areas being studied in the RARE and RARE II. This meant other areas of the forest were harvested at heavier rates. For the roadless areas released to timber management, accelerated construction of collector roads will be necessary to space harvesting activities more evenly across the entire forest. Most of these will be located outside of riparian areas. However, accelerated roading does not mean the Forest will offer timber that does not provide a net public benefit.

Roads funded through the Capital Investment Program often provide initial access into roadless areas. A first entry timber sale may be "below cost" because the road costs are not covered by the timber sale revenues from the first sale. However, the roads will also access future timber sales and are a long-term investment that has value well beyond the first entry timber sale. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of all benefits, present and future.

The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber revenue loss. Examples of net public benefits outweighing timber revenue losses are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of: 1) timber sales larger than 1 million board feet (MMBF), and 2) transportation systems for unroaded areas where timber harvest is scheduled.

would be built per year compared to 254 miles under alternative d, which projects 15% more trout. Would similar reductions in road construction result in further increases in trout populations? M

Another problem associated with increased roading on fish populations is described in the DEIS - "most roads in riparian areas remain open to vehicle use during fishing season. Available literature documents decline in fisheries with parallel road access due to over fishing." (DEIS, p. III-27). Considering the large number of riparian areas that are currently roaded, it would seem prudent to avoid any road construction or increased access until the Lolo forest planners are able to gain a better understanding of the effects of management activities on trout. N

WATER QUALITY

The plan states that "management practices will be used to carry out these activities to assure that they will accomplish forest plan goals, one of which is to meet and/or exceed state water quality standards." (DEIS, p. II-66).

Montana law provides that:

> Non degradation policy. The Board shall require: (1) that any State waters whose existing water quality is higher than established water quality standards be maintained at that high quality unless it has been affirmatively demonstrated to the Board that a change is justifiable as a result of necessary economic or social development and will not preclude present and anitcipated us of water..." M.C.A. 75-5-303.

Thus, it is the policy of the State of Montana that water should not be degraded below ambient quality. As the plan recognizes, much of the water quality on the Lolo National Forest is very high. In fact, in a number of areas that are either unroaded or have not had any road construction or timber harvest in a decade or more, water quality is probably close to pristine. Thus, any road construction or timber harvest in these areas will degrade water quality. The DEIS states that "projects that will not meet State water quality standards will be redisigned, rescheduled, or dropped." (DEIS, p. II-66). Under this O

FOREST SERVICE RESPONSE CONTINUED

From 1979 to 1984, the Forest offered an annual average of 100 MMBF and sold an annual average of 60 MMBF. In response to these demand levels, the 1985 sale program was adjusted to 80 MMBF. The Forest made this reduction in order to provide a more cost-effective program. If market demand increases, the "backlog of unsold timber" provides the Forest the flexibility to again respond. If market conditions demand volumes beyond the decade Allowable Sale Quantity, the Forest would address the problem through a Forest Plan revision (see Figure V.1, Forest Plan). National Forest Management Act regulations outline the revision process which includes full public involvement.

M The amount of road construction is only one of the activities that influences the fish populations projected for each alternative. Expected livestock use, percent of riparian areas roaded and the amount of habitat improvement planned are examples of other activities influencing population numbers. Thus reduced road construction alone will not increase trout populations.

N The management of riparian areas is addressed in Management Areas 13 and 14 of the Forest Plan. Under MA 13 standard no. 12, new road construction will be minimized and access will be constrained in riparian zones.

WATER QUALITY

O The Forest will meet the intent of Montana's non-degradation policy with Forestwide Standard Nos. 15 and 28. Forestwide Standard No. 28 states in brief: "Land management practices shall be designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress. (A long-term stress is defined as a downward trend of indicators such as aquatic insect density or diversity, fish populations, intragravel sediment accumulations, or channel structure changes that continue for more than one hydrologic year...)." This latter standard requires a quantitative assessment of changes in stream quality based on existing condition. The one-year time period is a reasonable interval to evaluate effects.

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in order to comply with standard, the Forest Service, in non-degradation policy enacted by the State of Montana, should simply not construct roads in roadless drainages. Compoiance with the clear letter of the law requires that the Forest Service refrain from management activities unless they can ensure that no degradation (i.e., increased sediment yields) will result. O

ECONOMICS OF FISHING

The bias in the Lolo plan toward managing timber is nowhere better reflected than in its underestimation of the values of fishing and other recreational activities. The plan places a value of $15.75 per angling visitor day, increasing to $22.05 by the year 2025. Such a figure reflects a gross underestimation of the value of fishing to the local economy, particularly for a blue ribbon stream like Rock Creek. A recent study conducted by the Forest Service in Idaho placed the value of a fishing day at 63.87. P

DATA PROBLEMS

We applaud the efforts of the fisheries biologist to determine affects of development on fisheries, but he is so severely handicapped by a lack of appropriate data that his job is impossible. Forest managers must decide to develop an adequate data base commensurate with the importance of fisheries resources. The public should be made aware of the shortfall in data. The EIS should contain explanations of how estimates of trout populations and predicted effects were developed. The discussion should include fish populations, sediment yields and livestock utilization levels. Currently, the public must faithfully accept scenarios presented in the DEIS. Q

The basis for predicting effects of sedimentation on fish populations are

FOREST SERVICE RESPONSE CONTINUED

ECONOMICS OF FISHING

P The value of an angler visitor day is based on willingness to pay (WTP) values. These values were determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and RPA. An explanation of why the WTP values appear low and what they represent is warranted. WTP values estimate what the recreationist would be willing to pay at the point of use. Point of use is on the stream, ready to fish. Money spent elsewhere for fishing, such as for travel, lodging and fishing gear, is not included in the WTP values.

The value of fishing to the local economy is calculated in a different analysis, called an impact analysis. Input-output coefficients are used to determine the impact of recreation activities on the local economy in terms of jobs and income. This analysis was also used in the preparation of the Forest Plan. To directly compare the fishing values for Idaho and the Lolo, the assumptions and bases would have to be the same.

As an aside, the Lolo's management activities are designed to protect the resource regardless of the monetary value assigned that resource, be it fish or timber. The protective measures are more important than the monetary values because they guarantee a viable level of the resource, unencumbered by fluctuating monetary values. If the value of fishing was based on its monetary worth, then depressed conditions could impair the maintenance of a viable, healthy fish population. The discussion of the Forest's inability to meet the 1980 RPA Revised Statement of Policy (FEIS Chapter IV, Section N) is one example of the committment to resource protection.

DATA PROBLEMS

Q The Forest chose not to use the R-1/R-4 sediment model and the fish response model because not enough site-specific baseline data has been collected. The fisheries habitat and water quality coefficients used are detailed in the planning records which are available upon request. Although Forest-wide averages do not reflect specific on-site conditions, monitoring will emphasize: 1) the collection of local sediment and stream flow data and 2) streams with important fish habitat and/or potential sediment problems.

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two models, a sediment yield model and a fish response model. Both of models were developed in the Idaho Batholith Basin, an area of highly erosive granitic soils. These soils are not representative of watersheds in Montana particulary in the amount of fine sediments.

The sediment yield model requires a variety of data including soil types, and natural and presnet sediment yields. Predictions should be made on a watershed basis using site-specific data. As the authors of the sediment model state, "The importance of using better local data, and estimates if available, in place of supplied values can not be overemphasized." (Cline, et all, 1981). The authors of the fish response model recommend that "The sediment yield over the natural rate that occurs before substantial changes in habitat quality would take place (threshold effect) should be determined for the individual channel types of each forest." (Platts, et al., 1983). These data have not been collected. Recent information from Horse and Silver creeks (Idaho) indicates that the sediment yield model tends to underestimate yields.

Based on sediment yield data, the fish response model predicts the effects of sediment on trout spawning success, summer rearing capacity and overwintering habitat. At a minimum, data from substrate cores, surface embeddedness, or percent surface fines are needed to use the model. These baseline data are necessary to determine present conditions and detect change resulting from development. Such information has not been collected on the Lolo Forest. Research in the Swan River drainage (Leathe and Enk, 1985) indicated that percent fines with depth is much higher than baseline conditions found in the Idaho Batholith Basin. The Swan River study points out the importance of site-specific data. Without baseline data, the Idaho Batholith model would have predicted no effect based on percent increase in sediment yield, whereas the researchers in the Swan drainage found an immediate negative response with increased sedimentation.

R

FOREST SERVICE RESPONSE CONTINUED

R Validation of the R-1/R-4 Sediment Yield model has been given high priority. The model is derived from Idaho data and needs to be calibrated to Forest conditions. Before using the model for project evaluation, numerical factors will be developed that are specific to the Lolo. Many drainages were developed before 1975 and before there was a formalized monitoring program. The Forest has initiated monitoring on several undeveloped drainages for the purpose of providing natural background (baseline) information. Once development commences, the same monitoring procedures are continued to determine what changes occur in water quality, the aquatic environment or fisheries habitat. The monitoring results can be extrapolated to streams with similar hydrologic and biologic characteristics. Developed streams can then be evaluated for changes that may have occured prior to development and monitoring.

The data currently available suggests that some developed drainages, such as Schwartz Creek and Lolo Creek, which have measured increases in sediment also have healthy fish populations. When projects occur in drainages where sediment problems exist, constraints have been designed to prevent any net increase in sediment. These project areas also receive priority in project monitoring. Project monitoring design is structured to provide additional feedback for increasing predictive capability on a localized level.

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Once degraded, a drainage will not likely return to pristine sedimentation rates (Platts, et al., 1983). Projections made assuming pristine condtions or with insufficient data to correctly quantify current conditions are not sensitive enough to protect fisheries and will underestimate the effect of development. Such is the case with the Lolo DEIS.

Recovery rates of streams vary from one drainage to another (Platts, et al., 1983). One cannot extrapolate from the South Fork of the Salmon River where the model was developed, but information on recovery rates is too important to ignore in the interpretation of model predictions (Platts, et al., 1983). At this point in the planning stage the Forest Service does not have data on what stage of degradation or recovery its streams are in. Additional sediment loading, considered innocuous by the model, may trigger further damage and/or seriously impede recovery. Streams may never regain their potential productivity. S

The Forest Service does not even have sufficient data to accurately estimate trout populations on the forest. Apparently, populations were estimated using habitat survey information and population data from streams in the region. Trout populations in the 1985 DEIS are substantially higher than those in the 1982 DEIS. The discrepancy between the original and revised estimates indicates a lack of data on the fisheries within the Lolo forest. The 1982 DEIS placed populations at approximately 87,000 catchable trout, while the current analysis uses a figure of 963,000. Such s dramatic shange should tell forest planners that they are dealing with a resource about which they do not have much information. This uncertainty is a compelling reason for a dautious approach towards road construction and timber harvesting until more is known about fish populations. T

To determine relative effects of alternatives, accurate population estimates may not be necessary. However, reasons exist for using correct estimates. Forest-wide averages do not reflect site-specific conditions; damgge to fisheries U

FOREST SERVICE RESPONSE CONTINUED

S The Forest is monitoring fish habitat on approximately 25 streams for both current condition and changing conditions following development. This monitoring also provides for the evaluation of risk to other streams and recovery following any indication of downward trends. On some of the Forest's degraded streams the stage of recovery is not known because baseline monitoring was not in place prior to the mid-1970s, except for Rock Creek. However, when deterioration is detected in sampling, steps are taken to correct the cause of deterioration.

There can be a natural variability in sediment yield of 200-300 percent annually. The Forest will be using the results of a validation study currently in progress, by the Forest Service Intermountain Station, to adjust our activities if necessary.

T Prior to 1984, the only available fish population data on Forest streams was from Rock Creek. Therefore the Forest relied heavily on Montana Department of Fish, Wildlife and Parks for fish population estimates. Literature reviews from Montana and Idaho also provided some data. Extrapolation to the Lolo resulted in the 87,000 catchable trout on streams outside of wilderness. Additional fish population estimates were completed on Forest streams in 1984 as a result of a Montana Department of Fish, Wildlife and Parks study made in conjunction with the construction of the Garrison-Taft 500 kv transmission line project. Fish populations for non-wilderness streams were extrapolated from this new data, producing a much larger estimate of 906,000 catchable trout.

U Forest-wide averages do not reflect site-specific conditions, therefore the Forest Plan monitoring program has been developed to gather site-specific information. The site-specific monitoring coupled with Forestwide Standard No. 28 provide for evaluating the effects of activities on each drainage. Averaging was necessary when developing and discussing alternatives in the DEIS and not intended for evaluation of project activities.

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may vary widely from predictions. Averaging tends to hide serious degradation in drainages heavily managed for timber or range. The relative importance of fisheries is not taken into account.

U

MONITORING

Obviously, insufficient funds have been allocated for fisheries work in the past. The public has a right to know that enough funds are being spent on fisheries and water quality. Funds should be tied to development or better yet, guaranteed at a level sufficient to collect needed information. This way, we will not be in the same situation in ten years when forest plans are reviewed. If proper funding does get allocated for monitoring and mitigating sediment yields, development should be halted or curtailed to a level commensurate with funding.

Towards this end, an extensive monitoring system needs to be established. We encourage the Forest Service to expand its invertebrate monitoring program and use the sediment yield and fish response models as the basis for additional monitoring. If the Forest Service is going to use the model to predict changes in fish populations, then data appropriate to the models should be collected.

V

With the uncertainties of the sediment/fish response models, the lack of data on which to base either model, and the risk of degradation off-forest, monitoring criteria should include a wide safety margin.

W

Perhaps a ten-fold factor to ensure as little degradation as possible, and a short recovery period. The fish response model states that type A stream reaches can suffer a 100% increase in sediment yield without damaging fish habitat, a type B stream 45%, and a type C stream 35%. These thresholds indicate levels at which significant effects occur (Platt, et al., 1983), which are unacceptable on or off the forest. Therefore, even with the proper data, these levels are improper as criteria. Five percent increases in sediment yield are a better level at which to trigger

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FOREST SERVICE RESPONSE CONTINUED

MONITORING

V The Forest has been collecting sediment and stream flow data from 25 streams during the past 6 years. The Forest will continue to collect this data to calibrate the sediment yield and fish response models and to assess the effects of land management activities. The monitoring is designed to sample the range of projects occuring in watersheds of various geologic and hydrologic characteristics that have the potential to alter water quality, aquatic environment or fisheries habitat. Through project monitoring the Forest will have the capability to detect deteriorating habitat conditions. Forest level monitoring is not intended to duplicate the intensity of current research efforts. The planned funding for monitoring is included in Table V.2 of the Forest Plan. During implementation, the following direction in Chapter V, Section D of the Forest Plan applies: "If monitoring can not be accomplished in accordance with this plan, management activities will be redesigned, rescheduled or dropped and an amendment will be issued."

W Research to determine the fisheries response to sediment is now underway at the Forest Service Intermountain Forest and Range Experiment Station. Forest-level monitoring is designed to provide information to management for the assessment of whether assumptions and predictions of the effects of management actions were accurate. If these assumptions and predictions were not accurate, then Forest Plan Figure V.1, Decision Flow Diagram for Evaluating Variability of Monitored Activities, will be followed to modify actions of the Plan.

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additional mitigation of sediment yields or halt development. A low percent increase criteria for sediment yields is appropriate for a non-degradation management approach.

EFFECTS OF PLAN ON TROUT

X Without data, no one can accurately predict the effects of the proposed plan on water quality or fisheries. However, for several reasons, we believe the Forest Service is underestimating the effects. The lack of data needs to be addressed, and is not an excuse to develop or exploit resources just because effects cannot be quantified at this time. Logic demands a conservative approach to management until data needs have been fulfilled.

Y Several factors may limit trout populations, and without studies to determine which are operating on a certain stream, no one can correctly interpret results from the fish response model (Platts, et al., 1983). The model has no way of determining which of its three factors (spawning success, rearing capacity, or overwintering habitat) is limiting a population. Interpretation of predicted effects should vary from stream to stream, but without site-specific data this can not be done.

The fish response model forms its predictions around three channels types, A, B, and C, determined by channel gradient. Type A is a high gradient stream reach, type B intermediate, and C low gradient. Even the high gradient stream reach, which is capable of transporting a relatively large amount of sediment before deposition occurs, may suffer more habitat loss than the model predicts, as the authors of the model caution (Platts, et al., 1983). Microhabitat used by trout in type A stream reaches, habitat that in such streams is in limited quantities, will suffer from sedimentation even though the model predicts no harm to fish populations. The DEIS should indicate what percent of streams on the forest are A, B, or C, and what the predicted effects are. Off-forest

X EFFECT OF PLAN ON TROUT

Since a strong data base and accurate models are in the process of being developed, the predicted effects of land management activities will become more accurate over time. To prevent resource damage due to imprecise data and models, the Forest uses management practices designed to minimize risk to streams. These practices are often referred to as project constraints. They are applied more extensively in erosive soil areas. In some areas with known sediment problems, such as Lolo Creek, no project can be implemented unless the constraints produce a calculated net decrease in sediment yield.

Y As mentioned earlier, the Forest did not use the fish response model. The Forest recognizes the need for additional information on the relationship between sediment load and fish survival and identifies this need in the Forest Plan under Research Needs, Chapter II, Section C.

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stream reaches are likely to be low gradient streams requiring longer recovery rates.

We are encouraged by the Forest Service plan to manage grazing under an allotment program that recognizes grazing as deleterious to aquatic resources. However, we are concerned that funding may not be sufficient to deal with the grazing program. We would like to see a study commissioned to determine the effectiveness of grazing management in riparian zones. The question that remains is whether the Forest Service will restrict grazing allotments when they are unable to protect riparian systems as anticipated, or when management does not result in the anticipated trout population increases. We strongly recommend such a standard be incorporated into the plan. Z

HABITAT IMPROVEMENT

We support prevention of resource degradation, not post-development mitigation. We do support fish habitat improvement to enhance trout populations, but do not want to rely on such projects to mitigate the effects of road building or grazing. Table II-23 indicates the forest will have constructed 90 projects per year in the period from 1982 to 1985, 20 projects a year from 1986 to 1990, and no projects for the remainder of the fifty year plan. How will the forest be able to maintain fish popualtions without these projects in light of dramatic increases in roads? The DEIS does not indicate the effectiveness, life expectancy, or maintenance associated with habitat projects. AA

The forest has not been able to reach habitat improvement targets in previous years. For example, in fiscal year 1984, the Lolo Forest produced only 51 such projects even though the plan called for 90. The DEIS clearly recognizes that road construction directly and adversely affects fisheries, both by destroying habitat and by increasing fishing pressure. From the standpoint of maintaining fish populations, rather than relying on habitat improvement

FOREST SERVICE RESPONSE CONTINUED

Z Range allotment management plans are analyzed and reviewed every 10 years and restrictions are normally implemented at this time. However, any plan can be modified when a need is identified. To meet riparian objectives, monitoring is required in range allotments having significant riparian acreage. When riparian objectives are not being met, additional restrictions are applied or the area closed to grazing. A number of riparian grazing allotments have been terminated because of stream impacts during the past five years. In addition, the 10-year range reviews also address the grazing impact on other resources and make modification when necessary. As stated in MA 14, one goal is to: "Manage riparian areas to maintain and enhance their value for wildlife, recreation, forage, fishery and aquatic habitat, and water quality, while maintaining livestock grazing that is compatible with the above resources."

AA HABITAT IMPROVEMENT

Habitat improvement projects are designed to restore production to damaged areas. Projects are now being designed to avoid resource damage requiring post-development mitigation. Therefore, additional habitat improvement projects are not anticipated beyond 1990. Habitat improvement work could continue beyond 1990 if current needs were corrected at a slower rate than anticipated due to reduced funding levels.

BB Although the Final EIS does not select Alternative f as recommended, the preferred Alternative d balances resource outputs such as timber, range, wildlife, wilderness, etc., while maintaining water quality and land productivity in both wilderness and non-wilderness drainages. The preferred alternative recommends 223,600 roadless acres for wilderness. They are located in the Quigg and Hoodoo roadless areas and in additions to the Scapegoat Wilderness and Selway/Bitterroot Wilderness. In addition, 177,895 acres continue under roadless management. Of the remaining 371,890 acres, 175,842 acres will potentially be accessed during the next decade.

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projects, we prefer to keep as much of the Lolo National Forest unroaded as possible.

In addition to benefiting fisheries, unroaded areas provide more secure habitat for elk and other big game, more opportunities for wilderness recreation, and spare the taxpayer the cost of deficit timber sales that often occur in such areas. Under the proposed alternative, only 27% of the 776,190 roadless acres on the forest are recommended for wilderness protection. Forty-eight percent of the roadless acres will be avaible for development. In fact, the recommendations under the proposed action are similar to three of the other alternatives. At a minimum, we support the wilderness recommendations listed under Alternative F, which provides protection for 399,699. We hope the Lolo National Forest will seriously consider adopting the wilderness allocations under this alternative, but we do not want to sacrifice water quality and fisheries habitat in non-wilderness drainages at the same time.

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ADD TO: M-E-6

NATIONAL WILDLIFE FEDERATION

Northern Rockies Natural Resource Center
240 N. Higgins, Missoula, Montana 59801
(406) 721-6705

July 8, 1985

Orville Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Orville:

After submitting our comments on the proposed Lolo plan and draft EIS, I realized that we were mistaken in assuming the Lolo Forest used sediment yield and fish response models developed in the Idaho Batholith Basin.

The use of one model or another does not significantly affect the thrust of our comments or recommendations. The lack of data on which to base fisheries models is obvious.

Our main concern remains management direction and policy, as discussed in our original comments.

Sincerely,

Chris Kronberg

Chris Kronberg

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Conservancy

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Big Sky Field Office
Power Block West
Last Chance Gulch
P.O. Box 258
Helena, Montana 59624
(406) 443-0303

June 7, 1985

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

Following is some information which should be useful to you in the forest planning process. The Montana field office of The Nature Conservancy has begun a biological inventory in the state, as part of a nationwide effort called the Natural Heritage Program. The primary goal of the Nature Conservancy is to preserve species diversity, and The Natural Heritage program is the scientific data base we use to identify species and communities which are in need of protection. At this point we want to provide you with a list of special occurrences on your forest, at least those that we know of through our fledging inventory.

I do not envy you the arduous task of creating your forest plan, and I imagine it is an exercise in frustration to respond and incorporate all of the public comments into these plans. Hopefully our input will over the long run simplify your job, rather than complicate it. The Forest Planning Act recognizes many of the same concerns which are important to The Nature Conservancy. Long term maintenance of our biological life-support systems requires long-range planning which is in turn dependent on a thorough understanding and inventory of those systems.

The Forest Service is mandated to maintain viable populations of existing native and desired non-native plants and animals, and to share in the recovery plans for endangered and threatened species (FSM 2621.1). To do this, the Forest Service manual describes the kinds of inventories that are needed, and recommends that this information be obtained from other resource inventories, instead of using Forest Service time to collect this data (FSM 2621.3). The Nature Conservancy designed Natural Heritage to be a widely used source document of previously scattered or unavailable information. The Oregon Program provides information for 27 public agencies, 11 private institutions and consulting firms, and eight colleges and universities.

UM-E-9 (2f9)

Presently, we have an initial list of critical species and communities and their occurrences in Montana. Where that information is relevant to your forest, it is included in this commentary. During the '85 state legislative session, the Natural Heritage Program was deemed important enough to be funded, and the inventory will now move into formal operation with the hiring of specific natural heritage biologists. National Natural Heritage staff will supervise the implementation of this program, using the standardized system which has been used in 39 states. However, the state of Montana has ultimate authority over the program and the information system will be housed in the state library system.

In recognition of your planning deadlines, we want to provide you with what information we have at this time. However, our data bank is far from complete. As more information becomes available, we will be happy to provide it to you. We would also appreciate your feedback on what particular kinds of information will be most valuable. As our data base begins to take shape, we will be in a position to suggest areas for special management consideration, as well as notify you of unusual occurrences. Although this inventory will add to the list of species to worry about, we find that the inventory research also results in removing some species from the "worry" list. I have included a key to our ranking system so you will understand how we determine our protection priorities.

Thank you for the opportunity to participate in the forest planning process.

If you have any questions about this commentary, or about The Nature Conservancy and the Natural Heritage Program, please feel free to call me.

Sincerely,

Joan Bird

Joan Bird
Montana Protection Planner

cc: Bob Gail

WM-E-9 (3 of 9)

TNC comments Lolo Plan
page one

RARE PLANTS ON THE LOLO NATIONAL FOREST

1. Calamagrostis tweedyi (Cascade weedgrass) G2, S1/S2

Status: Listed by The Nature Conservancy as endangered both globally and in the state. Candidate for federal listing (USFWS category 2). Listed as "rare" by the Montana Rare Plant Project. Regional endemic. The only known Montana occurrences are on the Lolo National Forest.

Location: Superior Ranger District.

Vicinity of Cold Peak:	Cold Peak: T17N, R28W, S2 Off Cold Peak Rd: T17N, R28W, NW 1/2 S2 Above Cold Peak Rd: T18N, R 28W, W 1/4 S36
Vicinity of Newman Ridge:	T18N, R29W, S29; T18N, R29W, SW 1/4 of S25; T 18N, R 29W, SE 1/4 of S26.

Habitat: Montane grasslands and open slopes in forested areas at mid-elevations. May be found in old burns and clearcuts.

Recommendations for Management: This is a plant which The Nature Conservancy would like to see protected. Because it is a successional species, it may be dependent on disturbance for its continuance. The Cold Peak and Newman Ridge occurrences are in proposed Management Areas 23 and 16, respectively. Monitoring of the populations is the only way to determine if the management action agrees with the species. Any designation which ensures monitoring is acceptable, until more information is available. A

2. Mertensia bella (Oregon bluebells) G3/S1

Status: Listed as globally threatened and endangered in the state by The Nature Conservancy. Recommended for threatened status by Montana Rare Plant Project. Disjunct. Only one known population in Montana.

Location: Missoula Ranger District, head of Dick Creek, (T11N, R22W, S33). Site is about three acres of seepy moist ground on an east-facing slope along the road.

Habitat: Wet meadows at mid-elevations in the mountains.

Management recommendations: The site is an old clearcut. The species might not be as abundant under canopy. The population is healthy and unthreatened at this time by the proposed managment (MA 17). Because the population is fairly large, dense and showy, designation as a botanical Special Interest Area should be considered for the future. B

FOREST SERVICE RESPONSE

WM-E-9

The Natural Heritage Program appears to be a logical starting place for the inventory of plants and their locations that are in need of protection recognition. The Forest will always be interested in the progress of The Nature Conservancy's efforts relative to threatened and endangered plants and in the preservation of species diversity. The ability of the Conservancy to provide the status of plants increases the Forest's ability to consider and respond to protection management if the situation warrants.

The specific plants of interest contained in your letter, along with the management situation for the locations provided, are summarized below:

A Calamagrostis tweedyi - If this species is designated as endangered, Forestwide Standard No. 27 provides direction for taking appropriate action to protect its habitat. Location information would be placed in the Lolo data base so that managers would be aware of it during project planning.

B Mertensia bella - Few Botanical Special Interest Areas have been designated to date. Future designation of such areas will proceed cautiously as the Forest assesses overall needs, sees how the public accepts Botanical Areas and evaluates how best to protect Threatened and Endangered plants, if any are so designated on the Lolo. In the interim, periodical monitoring of the species will take place.

WM-E-9
(479)

TNC comments Lolo Plan
page two

3. **Penstemon flavescens** (Yellow beardtongue) G3/G4, S3/S4

Status: The Nature Conservancy ranks this plant as possibly threatened globally and in Montana. Is is listed as "rare" by the Montana Rare Plant Project. Regional endemic.

Location: Nine-Mile Ranger District in Granite Peak on the Idaho border (T11N, R25W, S14). Steep slope in an old burn.

Habitat: Rocky granite-derived soils on open slopes and subalpine forests at higher elevations in the Bitterroot Mountain: 7,500-8,500'.

Management Recommendations: The proposed wilderness management (MA 12) for this site will afford adequate protection. There are many occurrences in the Selway-Bitterroot Wilderness. C

4. **Synthyris canbyi** (Mission Mountain kittentails) G3/G4, S3/S4

Status: The Nature Conservancy ranks this plant as possibly threatened globally and in Montana. Listed as "rare" by Montana Rare Plant Project. Regional endemic found only in Missoula and Lake Counties.

Location: Missoula Ranger District, Rattlesnake Wilderness and National Recreation Area. Mosquito Peak, McLeod Peak, and Sheep Mountain.

Habitat: Rocky soil and talus (usually limestone) near or above timberline in the Swan and Mission Mountains: 7,000-9,500'.

Management Recommendations: The proposed management for these sites (MA 12 for Mosquito and McLeod Peak: MA 28, 6, 16, 27 for Sheep Mountain) meets our protection goals for this species. D

5. **Carex paupercula** (Poor sedge) G4/S1

Status: The Nature Conservancy ranks this plant as secure globally but endangered in the state. Listed as "rare" by the Montana Rare Plant Project. Three known occurrences in Montana.

Location: Missoula Ranger District. Sheep Mountain Bog and Shoo Fly Meadows.

Habitat: Sphagnum bogs at low to mid-elevations: Flathead and Missoula counties.

Management Recommendations: Sheep Mountain Bog is a designated RNA (MA 6) which is ideal management for protection. Shoo Fly Meadows is in the Rattlesnake Recreation Area (MA 28). In the proposed plan, Shoo Fly Meadows is being considered as a botanical Special Interest Area, to protect Sphagnum riparian. We endorse a special designation for the area, noting the presence of several rare elements (see Northern Bog Lemming, below), and would like RNA status considered. E

FOREST SERVICE RESPONSE CONTINUED

C Penstemon flavescens - The proposed wilderness management for this site will afford adequate protection.

D Synthyris canby. - For the area allocated to Management Area 16, an evaluation of the implications on the species will be made prior to any proposed ground-disturbing activity.

E Carex paupercula - Studies are continuing for designating Shoo Fly Meadows as a Botanical Special Interest Area. At this time the Forest has reached its target for this type of community in the Research Natural Area (RNA) system. While this does not preclude designation, the goal is to gain a wide distribution over the Region to assure representative samples of vegetation. Since this area is close to Sheep Mountain Bog, other areas will have a higher consideraton for inclusion in the system.

WM-E-9
(5 of 9)

6. Ligusticum verticillatum (Verticillate lovage) G4/G5 S4

Status: The Nature Conservancy does not consider this plant threatened though its distribution is limited. It is listed as "rare" by the Montana Rare Plant Project. Regional endemic which is known only from central and northern Idaho and western Montana. Four known sites in Montana.

Location: Thompson Falls Ranger District between Evergreen and Buster Brown Gulch (T21N, R31W, S28).

Habitat: Moist woods and meadows at mid-elevations in the mountains.

Management Recommendations: The proposed MA is either 22 or 23 which is either medium or high visual sensitive areas managed for wildlife and timber. At this time, management agency notification is our only protection goal. F

7. Erythronium grandiflorum var. candidum (White glacier lily) G5T3/S5T2

Status: The Nature Conservancy lists the subspecies as threatened globally and endangered in the state. Listed as "rare" by the Montana Rare Plant Project. Regional endemic with two known sites in Montana. Jane Fritz-Sheridan in the U of M botany department feels it may be a separate species.

Location: Seeley Lake Ranger District, near road site.

Habitat: Meadows and open woods at lower elevations.

Management Recommendations: The MA immediately surrounding Seeley Lake is 9, indicating heavy public use. If there is a dense site, a botanical Special Interest Area may be the way to go. Futher research is needed to determine the exact location and distribution. Trampling and collecting may threaten the population. G

There are four other species which The Nature Conservancy considers endangered or threatened which probably occur on the Lolo National Forest, though we do not yet have occurrence records for them on the LNF. These include: H

Howellia aquatilis (Howellia) G1/S1

Grindelia howellii (Howell's gumweed) G2/S2

Nymphaea tetragona (Pygmy water-lily) G3/G4/S1

Phlox kelseyi var. missoulensis (Missoula phlox) G2/G2 S2/S3

Additional information on these plants is available through our office.

VI-64

FOREST SERVICE RESPONSE CONTINUED

F Ligusticum verticillatum - Information concerning the location of this species will be provided to the District. The impact of any ground-disturbing activity on the survival of the species will be evaluated.

G Erythronium grandiflorum var. candicum - The designation of Botanical Special Interest Area will be approached cautiously. A nature walk-type area may be appropriate for future development.

As additional information becomes available on these or additional species, the Forest will review it and the anticipated impacts of proposed management activities on them.

H
K The search for other vegetation communities to fill out RNA targets continues. As they are identified they will be added to Management Area 6 as either Research Natural Areas or Botanical Areas. The Forest will review any proposals for consideration.

WM-E-9
(6 of 9)

TNC comments LOLO
page four

RARE ANIMALS ON THE LOLO NATIONAL FOREST

The Nature Conservancy's data in Montana is not as developed for rare animals as it is for rare plants. We do have plans to hire a zoologist in the near future for inventory work. Besides federally-listed threatened and endangered animals, which are adequately addressed in the Lolo plan, there are some other species which deserve attention.

1. Couer d'Alene salamander (Plethodon vandykei idahoensis) G2Q/S1

Status: The Nature Conservancy lists this animal as endangered globally and critically endangered in Montana. Dennis Flath lists it as "rare" in his Species of Special Interest or Concern. This summer, Idaho Fish and Game is doing a genetic study to determine if this may be a separate species. The U.S. Fish and Wildlife Service was petitioned in July of 1984 to consider it for listing as an endangered species.

Location: Plains Ranger District, Cascade Creek (T18N, R25W, S19) Also reported from two sites near the Lolo N.F. : Paradise Creek in Sanders County and Woodman Gulch off Hwy 12 in Missoula County.

Habitat: Under rocks, logs, and bark near lakes, rivers, and streams, often in seepages where the soil is thoroughly wet. Also splash or spray zones near waterfalls.

Management Recommendations: The Cascade Creek site is probably adequately protected as MA 19. We do not have enough information at this time to determine if this is a significant breeding site. The species is threatened by development of most kinds. There are undoubtedly many other occurrences on the Lolo National Forest and we would like to see field employees informed of its status and identification. I

2. Northern Bog Lemming (Synaptomys borealis) G5/S3

Status: The Nature Conservancy lists this species as secure globally but threatened in Montana. Dennis Flath of Montana Fish Wildlife and Parks lists it as "rare in his Vertebrate Species of Special Interest or Concern. Montana is at the southernmost tip of its range, which is nearly identical to the range of the gray wolf. Two known occurrence sites in Montana.

Location: Missoula Ranger District, Shoo Fly Meadows

Habitat: Sedge-alder bogs within or on the edge of dense spruce-fir, and lodgepole forest.

Management Recommendations: Shoo Fly Meadows is in the Rattlesnake National Recreation Area (MA28) and is under consideration for designation as a botanical area. Because there are several rare plants and animals on this site, it deserves recognition and consideration as an RNA. J

FOREST SERVICE RESPONSE CONTINUED

I The majority of the suitable habitat in the vicinity of the known range of the Coeur d'Alene salamander on the Plains District of the Lolo is proposed to be managed in a roadless or near-roadless state with primarily non-impactive land management activities. Low funding levels preclude wide-scale surveys to determine the range of this salamander. As specific projects are proposed that may have an impact on this species or its habitat, site specific inventories will be made to determine its presence or absence and measures recommended to assure continued existence of this animal and its habitat.

J In addressing the needs of the northern bog lemming and its habitat, which at this time has been confirmed only in the Shoo Fly Meadows area of the Rattlesnake NRA, the Forest is still in the process of analyzing the needs the area would serve and the best approach to achieve those needs. Classification as an RNA is not under consideration at this time because the area does not meet the vegetative types identified as needed for research purposes. A Special Interest Area - Botanical/Zoological is being considered because of the unique floral and faunal characteristics. The normal management of sedge-alder bogs would be protective in nature because of its riparian values and presence in the Rattlesnake RNA.

wm-E-9
(789)

EXEMPLARY NATURAL COMMUNITIES ON THE LOLO NATIONAL FOREST

The Nature Conservancy is in the preliminary stages of establishing a community classification system for Montana. Our regional ecologist is collaborating with forest service scientists and other habitat specialists to devise a system with broad applicability.

Although your six proposed Research National Areas are not on our skeleton list of special natural communities, one of them (Sheep Mtn. Bog) does have a plant which we would like to see protected (Synthyris canbyi). I am personally familiar with the Carlton Ridge area and have used it as a teaching site. Although I do not have the information to endorse each of your proposed sites, in general, we support the Research Natural Area concept and commend you for your assertive action in identifying potential sites.

Shoo Fly Meadows has already been referred to twice as a unique area with many rare elements which is worthy of consideration for RNA status.

The Nature Conservancy has also recognized Fish Creek as being an outstanding example of a pristine mountain stream. The west fork of Fish Creek to the mouth, at the Clark Fork wasrated highly by the 1980 Montana Fish Wildlife and Parks stream evaluation. It was given the highest possible rating in fishery resource value and in habitat and species value. The upper portion of the drainage would be protected by the proposed wilderness classification (HA 12). Other proposed managements for the stream (MA 1, 19, 27) also do not seem to pose a major threat to the quality of this stream.

At this time The Nature Conservancy does not feel it has the information to make concrete proposals for RNA's. However, it is likely that we may have recommendations in the future as our Natural Heritage data system becomes more complete. We would like to suggest that your planning process be dynamic enough to accommodate RNA or other special management designation on presently unknown sites. As we are better able to assess our protection priorities, we will be contacting managers about specific goals.

x

WM-E-9
(8 of 9)

2.3.1 Definition Of Ranks

Global and state element ranks are listed and defined below. Definitions used for the previous element ranks (A1, A2, etc.) have been included in abbreviated form in brackets for comparison purposes. Note that use of the term "in North America" refers to North America north of Mexico.

GLOBAL ELEMENT RANKS:

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor of its biology making it especially vulnerable to extinction. [Critically endangered throughout range.]

G2 = Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of other factors demonstrably making it very vulnerable to extinction throughout its range. [Endangered throughout range.]

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the east) or because of other factors making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100. [Threatened throughout range.]

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

GA = Accidental in North America, i.e. not part of the established biota (e.g., European Cuckoo, Yellow-nosed Albatross, many other bird species).

WM-E-9
(9g9)

GE - An exotic species established in North America (e.g., Japanese Honeysuckle).

GH - Of historical occurrence throughout its range, i.e. formerly part of the established biota, with the expectation that it may be rediscovered (e.g., Ivory-billed Woodpecker).

GU - Possibly in peril range-wide but status uncertain; need more information. NOTE: This rank should be used sparingly. Whenever possible, assign the most likely rank and add a question mark (e.g., G2?) to express uncertainty or indicate a range (e.g., G1G2, G1G3).

GX - Believed to be extinct throughout range (e.g., Passenger Pigeon).

STATE ELEMENT RANKS:

S1 - Critically imperiled in state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor of its biology making it especially vulnerable to extirpation from the state. [Critically endangered in state.]

S2 - Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of other factors demonstrably making it very vulnerable to extirpation from the state. [Endangered in state.]

S3 - Rare in state (on the order of 20+ occurrences). [Threatened in state].

S4 - Apparently secure in state.

S5 - Demonstrably secure in state.

SA - Accidental in state, including species which only sporadically breed in state.

SE - An exotic species established in state; may be native elsewhere in North America (e.g., house finch or catalpa in eastern states).

(TX-G-1)
3-8-85

DEPARTMENT OF THE AIR FORCE
AIR FORCE REGIONAL CIVIL ENGINEER CENTRAL REGION (AFESC)
1114 COMMERCE STREET
DALLAS, TEXAS 75242

15 April 1982

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
APR 19 1982
RECEIVED

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels

Thank you for inviting us to comment on issues to be addressed on the revised Draft Environmental Impact Statement for the proposed Lolo National Forest plan.

We would like to express our continued support of the Forest Service land and resource management plans. The Air Force concern on wilderness issues involve the need to retain use of existing and the establishment of future military flight training areas and routes which may traverse these areas.

Flight training areas, routes and airspace requirements of the military are subject to change and do change frequently. Mission requirements, fuel costs and environmental constraints determine the decision to locate a military training activity. Because of general aviation and population pressures, low level high speed flights are relegated to areas which are least accessible and sparsely inhabited. Therefore, we request that you give full consideration to how planning and management decisions made by your agency may adversely affect or restrict use of low altitude airspace by the Air Force. The Air Force position on this matter is based on the high training and readiness values rendered by use of this low altitude airspace. Decisions to restrict military overflights will be opposed by the Air Force.

We hope this information is useful in your planning. If additional information is needed, our staff point of contact is Mr. Raymond Bruntmyer, (214) 767-2514, or FTS 729-2514.

Sincerely

JOE C. LA FON, JR., Lt Colonel, USAF
Chief, Environmental Planning Div.

Cy to: Mrs. Agnes Zipperian
A-95 Coordinator
Montana State Clearinghouse
Office of Budget and Program
Planning
Capitol Annex
Helena, MT 59620

AF/LEEVX

FOREST SERVICE RESPONSE

TX-G-1

The EIS and proposed Forest Plan do not specifically address military flights over the Forest. The only federal requirement appropriate to the Forest at this time is that all aircraft are to maintain an altitude of 2000 feet above average ground level over wilderness areas. This is applicable over the Selway, Bitterroot, Rattlesnake, Welcome Creek and Scapegoat wilderness areas, totaling 139,708 National Forest System acres on the Lolo Forest. It would also apply to the recommended Great Burn, Quigg, Selway, Bitterroot addition, and Bob Marshall addition, totalling 223,600 National Forest System acres, if these are approved for classification under the Wilderness Act of 1964. All of the existing wilderness areas are currently shown on flight maps.

TX - G - 1

Department of the Air Force
AFESC
1114 Commerce Street
Dallas, TX 75242
FTS 729-2527 (Ray Brundt)

The Air Force responded to the DEIS by telephone on 3/8/85 requesting that their original letter sent in response to the Forest Plan be used again.

Harriet Lang
3/8/85

TX - G - 1
This letter is a follow-up to telephone response received 3-20-85. Coding is the same.

DEPARTMENT OF THE AIR FORCE
AIR FORCE REGIONAL CIVIL ENGINEER CENTRAL REGION
1114 COMMERCE STREET
DALLAS, TEXAS 75242

20 MAR 1985

Mr. Orville L. Daniels, Forest Supervisor
Lolo National Forest
Building 24 Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

Thank you for allowing us the opportunity to review the Draft Environmental Impact Statement for the Lolo National Forest, Montana.

We continue to express our support of the Forest Service in developing functional management plans for lands under its control. The Air Force concern for these management issues contains the need to retain use of existing and the establishment of future military flight training areas and routes which may traverse these areas.

Currently no Air Force air operations traverse any portion of the study area. Although flight training areas, routes, and airspace requirements of the military are subject to change and do change frequently, it is not anticipated that new routes will be established in the immediate future.

We are hopeful this information is useful in your planning. If additional information is needed, our staff point of contact is Mr. Raymond Bruntmyer, (214) 767-2514, or FTS 729-2514.

Sincerely,

DON-MICHAEL BRADFORD, Captain, USAF
Director, Environmental Planning Division

Cy to: HQ USAF/LEEV

CO-G-2

U.S. Department of Housing and Urban Development
Denver Regional Office, Region VIII
Executive Tower
1405 Curtis Street
Denver, Colorado 80202-2349

March 15, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

This is in response to your request for comments on the Draft Environmental Impact Statement (DEIS) for the Lolo National Forest, Montana.

Your DEIS has been reviewed with consideration for the areas of responsibility assigned to the U.S. Department of Housing and Urban Development. This review considered the proposal's compatibility with local and regional comprehensive planning and impact on urbanized areas. Within these parameters, we find this document adequate for our purposes.

If you have any questions regarding these comments, please contact Mr. Howard S. Kutzer, Regional Environmental Officer, at (303) 844-3102.

Sincerely,

Robert J. Matuschek
Director
Office of Community Planning
and Development

FOREST SERVICE
MAR 22 1985
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CO-G-2 DC-G-7

Some letters indicated no comment on the proposed Plan and Revised Draft Environmental Impact Statement and/or responded that the document was adequate for their purposes.

DC - G - 7

US Department of Transportation
United States Coast Guard

Commandant
United States Coast Guard

Washington, DC 20593
Staff Symbol: G-WP-3
Phone (202) 426-3300

16477.4b(0011)
29 Apr 85

Mr. Orville L. Daniels
Forest Supervisor, Lolo National Forest
Building 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

We have reviewed the Draft Environmental Impact Statement for the Lolo National Forest. We have no comments to offer at this time.

We appreciate the opportunity to assist your efforts in the development of this documentation. We look forward to continued mutual cooperation and coordination of these projects.

Sincerely,

W. M. McGOVERN
Chief, Environmental Compliance and Review Branch
Planning and Evaluation Staff
By direction of the Commandant

WA - G - 3

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124-2255

REPLY TO
ATTENTION OF
Planning Branch

MAR 25 1985

Orville L. Daniels, Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

We have reviewed the draft environmental impact statement, The Lolo National Forest Plan Revised, Montana, with respect to the U.S. Army Corps of Engineers' areas of special expertise and jurisdiction by law as designated by the President's Council on Environmental Quality on December 21, 1984.

Department of the Army permits may be required. For information about the permitting process, queries should be directed to the following address:]A

U.S. Army Corps of Engineers
Omaha District
ATTN: Regulatory Functions
Post Office Box 5
Omaha, Nebraska 68101

Thank you for the opportunity to comment on this statement. If you have any questions, please contact Dr. Steven F. Dice, of my staff, at the above address or by telephone (206) 764-3624.

Sincerely,

George W Ploudre

GEORGE W. PLOUDRE, P.E.
Asst. Chief, Engineering Division

FOREST SERVICE
LOLO NATIONAL FOREST
MAR 28 1985
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FOREST SERVICE RESPONSE

WA-G-3

A The Lolo Forest has had occasion to use the Department of the Army permit process during the past year.

WM-G-4

United States
Department of
Agriculture

Soil
Conservation
Service

Federal Building-Room 443
10 East Babcock
Bozeman, MT 59715

April 3, 1985

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

We have reviewed the Lolo National Forest Plan, Draft Environmental Impact Statement and Proposed Lolo National Forest Plan.

We feel you have given adequate consideration to the environmental concerns.

However, we are concerned with status of our snow courses and SNOTEL sites located on National Forest land and authorized under our Memorandum of Understanding. There are six sites, one of which is a radio equiped SNOTEL site. Our particular concern is for protection from logging, roadbuilding or other uses which would alter our correlations with streamflows. Access is also a concern, should road closures or access restrictions be imposed for other purposes. It does not appear any of the existing sites are in roadless areas. A

However, the Stuart Peak snow course is in the Rattlesnake National Recreation Area.

Each of these sites should be authorized on a separate Supplemental Agreement to our overall Memorandum of Understanding and with a copy on file in your office.

We would appreciate any steps that can be taken to prevent these sites from being destroyed or altered through management decisions.

Thank you for the opportunity to comment on this plan.

Sincerely,

Glen H. Loomis
State Conservationist

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MT
APR 8 1985
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FOREST SERVICE RESPONSE

WM-G-4

A The snow courses and SNOTEL sites on the Lolo will be protected as outlined in the Memorandum of Understanding and separate Supplemental Agreements. Currently on file are Supplemental Agreements for the following sites:

Stuart Mountain
Ambrose
TV Mountain
Seeley Lake
Hoodoo Basin
Hoodoo Creek
Heart Lake Trail
Slide Rock Mountain

Coyote Hill appears to be the only site not covered by a separate Supplemental Agreement.

H-G-6

MONTANA HISTORICAL SOCIETY
HISTORIC PRESERVATION OFFICE
225 NORTH ROBERTS STREET • (406) 444-4584 • HELENA, MONTANA 59620

March 11, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59807

RE: Lolo National Forest Draft Environmental Impact Statement

Dear Mr. Daniels:

Thank you for providing this office the opportunity to comment on the Lolo National Forest DEIS. We find the document to be particularly disappointing given that the Lolo National Forest has one of the most active cultural resource programs in the Region. Based on our reading of the document, cultural resources were not considered in the development of the alternatives nor in the potential effects or consequences of the alternatives. Instead, cultural resources are accorded what amounts to a three paragraph summary of the fact that they occur on Forest lands and that they are protected under the National Historic Preservation Act of 1966. In fact, the NHPA does not "protect" cultural resources but rather directs federal agencies to consider the effects of their activities on significant cultural sites. Procedures for proper consideration are provided in 36CFR800.

In short, the DEIS recognizes cultural resources as a part of the affected environment but fails to consider the effects of Forest undertakings in the planning process. A
We, therefore, urge the Forest to identify cultural resource management issues and concerns and incorporate these into the planning process, or a cultural resource management plan. If insufficient inventory data is available for formulating an effective plan, this should be identified as a problem area and courses of action should be set for its resolution. B

Sincerely,

Alan L. Stanfill,
Archaeologist/Anthropologist

FOREST SERVICE
[illegible]
APR 12 1985
RECEIVED

FOREST SERVICE RESPONSE

H-G-6

A The DEIS was lacking in describing the cultural resources program on the Lolo Forest. An expanded discussion appears in the FEIS in Chapter III, including a clear description of the future direction of cultural resource management on the Lolo.

In practice, the Lolo does consider the effects of proposed activities on cultural resources. Cultural resource inventories are conducted early in the planning stages for all proposed ground-disturbing activities. Project inventory reports, as well as site information, are sent routinely to the Historic Preservation Office of the Montana Historical Society (SHPO) for review and comment.

B In the event significant cultural resources will be affected, appropriate mitigation measures are implemented in consultation with the SHPO and the Advisory Council on Historical Preservation. The Lolo National Forest complies with the letter and spirit of cultural resource laws 36 CFR 800 and FSM 2360. And, through this process has begun to effectively integrate cultural resources on an equal footing with other Forest resources. The Draft Management Guidelines for the Lolo Trail and the Prehistoric Overview for the Lolo and Bitterroot National Forests are two examples of long range planning and management for cultural resources. These documents are available for review through the Forest.

ID-G-8

IDAHO DEPARTMENT OF FISH AND GAME
600 South Walnut • Box 25
Boise • Idaho • 83707

FOREST SERVICE
LOLO NATIONAL FOREST
MAY 13 1985
RECEIVED

May 10, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Re: Lolo Revised DEIS

Dear Mr. Daniels:

Thank you for the opportunity to comment on proposals for future management of some RARE II areas in Idaho which are addressed in the Lolo DEIS.

The Idaho Fish and Game Commission has recommended several areas in Idaho for Wilderness classification. The intent is to protect critical fish and wildlife habitats or endangered species. In some cases roadless management serves this intent as well as does Wilderness classification.

Some of the Idaho areas you address (01141, 01142, 01152, 01805) are not recommended for Wilderness by the Commission. However, others are so recommended (01301, 01302, 01799). Your Preferred Alternative (D) recommends 01301 but not 01302 or 01799 for Wilderness.

The Idaho Department of Fish and Game supports your recommendation on RARE II Area 01301. We reserve comment on Areas 01302 and 01799 until we have reviewed the appropriate forest plan, from Idaho, which addresses management of these latter two areas. A

If said areas remain roadless, that should adequately protect the values we think must be protected. If not, the Idaho Department of Fish and Game will again advocate their inclusion in the Wilderness system.

We look forward to reviewing the Panhandle and Clearwater Plans. Again, thank you for the opportunity to comment and for keeping the Department informed of progress on forest plans.

Sincerely,

for Jerry M. Conley
Director

JMC:CHN:tlv

cc: Regions 1 & 2, IDFG
Panhandle NF
Clearwater NF

• EQUAL OPPORTUNITY EMPLOYER •

FOREST SERVICE RESPONSE

ID-G-8

A Meadow Creek Area (01302) is not recommended for wilderness in the Final EIS, as an addition to the Great Burn/Hoodoo Wilderness Area. One thousand four hundred acres of the 7,200 acres on the Lolo portion are designated for roadless management in the preferred alternative. The results of public input received on the RARE II Draft Environmental Statement recorded 63 percent of the responses in favor of development.

Sheep Mountain-State Line (01799): About half of the Lolo portion for this area is designated for roadless management in the preferred alternative. Thirty-three thousand acres of the 40,500 acre Lolo portion will remain roadless in the first decade.

United States Department of Agriculture
Forest Service
R-1

WM-G-9
(p. 1 of 8)

REPLY TO: 2670 Threatened and Endangered

Date: MAY 01 1985

SUBJECT: Proposed Lolo Plan

TO: Forest Supervisor, Lolo NF

The enclosed Fish and Wildlife Service letter concurs with our conclusion that further consultation on your Proposed Forest Plan is not necessary.

for John Chandler
TOM COSTON
Regional Forester

Enclosure

cc: MT. FW&P, w/enc.
PP&B

LOLO NF

MAY -2 1985

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WM-G-9
(p. 2 of 8)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Endangered Species, Field Office
Federal Bldg., U.S. Courthouse
301 South Park
P.O. Box 10023
Helena, Montana 59626

IN REPLY REFER TO:
M.19 Lolo NF Plan

April 25, 1985

Mr. Tom Coston
Regional Forester
U.S. Forest Service
P.O. Box 7669
Missoula, MT 59807

Dear Mr. Coston:

We have completed our review of the Lolo National Forest (NF) Draft Environmental Impact Statement (DEIS), Proposed Forest Plan (Plan), and the revisions and supplements that you provided. Based upon your response to our 1982 biological opinion, the current Lolo DEIS/Plan, and the Forest Service's (FS) commitment to recovery of threatened and endangered (T/E) species; we concur with your decision that reinitiation of formal consultation on the Lolo DEIS/Plan is not necessary.

Due to the general nature of the Plan and the broad spectrum of activities it covers, it was impossible to identify specific and cumulative impacts of all programs and/or activities to T/E species. Therefore, future consultations may be required on each specific program or activity that may affect T/E species, at the time such programs or activities are designed and implemented. A

General Comments

We appreciate the efforts the Lolo NF is making to plan and work for recovery of T/E species, specifically: efforts to remap Management Situation (MS) I to cover more areas of grizzly bear spring and fall range; restricting the allocation of all MS I lands to those allocations that minimize human-caused mortality and provide intensive management options to improve grizzly bear habitat; management of MS II areas to prevent grizzly bear mortality; and the addition of the long range forest goal to manage to recover T/E species to non-threatened status. We would like to take this opportunity to provide comments and recommendations to further enhance the Lolo NF's efforts. B

References in the DEIS to the Threatened and Endangered Species Act should be to the Endangered Species Act (ESA). C

FOREST SERVICE RESPONSE

WM-G-9

A The Lolo will consult with the Fish and Wildlife Service at such time as specific activities or projects which could affect Threatened and Endangered species are proposed.

B The Forest's efforts to manage for recovery of Threatened and Endangered species are detailed in various sections of the Forest Plan and Final EIS, emphasized by Forestwide Standard Nos. 24 and 27 of the Forest Plan.

C All references to the Threatened and Endangered Species Act have been changed to the Endangered Species Act (ESA), as suggested.

WM-G-9
(p.3 of 8)

Grizzly Bear

Formal consultation was completed on May 10, 1982 when the Fish and Wildlife Service (FWS) issued a biological opinion that concluded that the Lolo Plan is not likely to jeopardize the continued existence of the threatened grizzly bear (Ursus arctos horribilis). The revised plan incorporates revisions to reflect recommendations in the biological opinion. Since then, the management definitions and directions for the grizzly bear management situations presented in the "Yellowstone Guidelines" have been adopted by Region 1 and the occupied habitat has been stratified. We recommend that the final Plan incorporate the habitat stratifications and their accompanying definitions and management directions. Through the formal consultation process on both the Kootenai and Flathead NF Plans, grizzly bear guidelines have recently been developed with input from both of our agencies. We recommend that the guidelines developed for these Forests be reviewed to possibly strengthen and support the standards and guidelines related to grizzly bears in the Lolo Plan. D E

In our review of the grizzly bear stratification for the entire Northern Continental Divide Grizzly Bear Ecosystem (NCDGBE), we noticed that there are some inconsistencies in the stratification done by the Bureau of Indian Affairs (BIA) and Lolo NF in the Rattlesnake area. This discrepancy should be resolved as quickly as possible so that a composite map of the grizzly bear stratification for the NCDGBE can be completed. Please contact Dale Harms of my staff at 585-5225, and the BIA so that stratification can be resolved in a coordinated effort. F

The grizzly bear recovery plan is undergoing revision, and is scheduled to be completed by the 4th quarter of fiscal year 1986.

Gray Wolf

Allocation of 69,250 acres of Roadless Area 1485 (Bear-Marshall-Scapegoat-Swan) will be valuable in protecting potential gray wolf (Canis lupis) habitat, in addition to grizzly bear habitat. The recovery plan for the gray wolf is currently undergoing revision and is scheduled for completion in the 4th quarter of fiscal year 1985. If approved, this plan will provide direction for managing wolf recovery, based on a zone management concept. G

FOREST SERVICE RESPONSE

D Management situations and definitions presented in the Interagency Grizzly Bear Guidelines have been incorporated as direction in the Lolo Forest Plan, Forestwide Standard No. 24.

E As suggested, the Forest has reviewed the Flathead and Kootenai National Forest grizzly bear guidelines. We will utilize these at the project level. Because of the minimal amount of grizzly bear habitat available on the Lolo, the bear management units generally overlap with the Kootenai and Flathead. Consequently, project activities will be coordinated with those Forests.

F The Management Situation Boundary inconsistencies pointed out have been corrected. A portion of the Flathead reservation in the Mission Mountains was upgraded to MS1 status, and a portion of the Lolo was downgraded to MS2 status to make the boundaries more logical. These changes are not reflected on the final proposed action map; however, the change is recorded in the data base. Management activities in these areas will be adjusted immediately to reflect these changes.

G When available, information from the Fish and Wildlife Service revised grizzly bear and gray wolf recovery plans will be incorporated into the Forest's Threatened and Endangered species management strategy.

WM-G-9
(p. 7 of 8)

Peregrine Falcon

Available data indicate that there are at least two historic peregrine falcon (Falco peregrinus) eyries on the Lolo NF. Although there are no known active eyries on or adjacent to the Lolo NF at this time, the potential exists for peregrine falcons to reoccupy historic sites.

Although peregrine falcon reintroduction plans for Montana do not include hacking birds on the Lolo NF during the next 5-10 years, we recommend that the Lolo NF develop a management/contingency plan to incorporate peregrine falcon concerns in the planning process so that you will be prepared to address peregrine recovery, should birds become reestablished on the Lolo NF. H

Peregrine reintroduction efforts are currently underway in Montana, Idaho, Wyoming, Colorado, and Utah. In 1984, peregrines bred and fledged young at one site in southwest Montana and one site in northwest Wyoming. These two pairs of peregrines represent the only known breeding peregrines in Montana and Wyoming since the late 1970's. All four adults were captive bred and reintroduced birds. Peregrines are extremely mobile birds: a subadult female hacked in southern Colorado spent the next summer at a hack site in northwest Wyoming. The possibility of peregrines reoccupying historic sites on the Lolo NF needs to be considered in project planning. We recommend the Lolo NF work with Ron Escano in your Regional Office regarding annual reoccupancy surveys of historic eyries on the Lolo NF. I

The recovery plan for the Rocky Mountain Southwest population of the peregrine falcon is currently under revision and scheduled for completion in the next few months.

Bald Eagle

Bald eagle (Haliaeetus leucocephalus) populations have been increasing in western Montana since 1980 when intensive eagle nesting surveys were initiated. Coordinated winter trend surveys began in 1979. Although peak numbers of bald eagles occur in Montana during spring and fall migrations; winter distribution is not well understood, and specific winter roosts, feeding areas and migration corridors, are not well documented.

Bald eagles are year-round residents on and/or near the Lolo NF. The DEIS discusses the influx of eagles from Canada that winer on the Lolo NF, and that Canadian birds are not considered endangered. It is true that bald eagles are not listed as

H The Lolo has established a contingency plan for hacking peregrine falcons on the National Forest. This is discussed in Chapter II of the FEIS under the Threatened & Endangered section (Section D5c). The Regional Office is assisting in the preparation of a contingency hacking plan. This will be a part of the Forest Plan data base.

I The Forest has been coordinating with the Regional Office on peregrine surveys for several years. A requirement to that effect has been added to the FEIS in Chapter II, Section D5c.

WM-G-9
(p.5 of 8)

endangered in Canada. However, in the lower United States (except for Washington, Oregon, Minnesota, Wisconsin, and Michigan where it is listed as threatened), the bald eagle is listed as endangered, regardless of its origin. Therefore, all bald eagles occuring in Montana are considered endangered, and provided full protection under the ESA. J

Activities on the Lolo NF have the potential to either beneficially or adversely affect the bald eagle. While human caused mortality factors such as shooting, poisoning, and electrocutions continue to threaten the bald eagle; the loss of habitat continues to be the most significant long term threat to the bald eagle, and should be carefully evaluated in long term forest management planning.

The Pacific States Bald Eagle Recovery Plan is undergoing agency review. The final recovery plan is scheduled to be out in fiscal year 1985. The primary objective in the recovery plan is to provide secure habitat, both for breeding and wintering populations of bald eagles. Efforts have been underway since 1982 to develop the Montana Bald Eagle Management Plan (MBEMP) under the direction of the interagency Montana Bald Eagle Working Group. The purpose of the MBEMP is to implement the recovery plan on a local basis in Montana. The MBEMP is being prepared for agency review, and should be available as a working document for land management agencies in Montana within the next year. We recommend that you consult the MBEMP and working group members when developing specific activities and programs under the Lolo Plan. K

Identification of winter roosts, feeding areas, and spring and fall migration routes need to be completed so that effects of Lolo NF activities and programs can be adequately evaluated in relation to the bald eagle. Without documentation of such areas, impacts of logging, recreational developments, etc. cannot be evaluated. The significance of Lolo NF resource allocations to protect and maintain habitat for wintering populations of eagles should not be understated. A reasonable assumption and prediction can be made that the condition of bald eagles that return to breeding sites in the late winter or early spring will directly influence their breeding success. And obviously, eagles that die during the winter due to inadequate food and/or shelter will not contribute further to the recovery of the species. L

Specific Comments

Lolo - Forest Policies, Guidelines, & Standards

In our 1982 biological opinion(copy attached), we discussed several of the Forest Policies and Standards, and provided recommendations to enhance Lolo NF recovery efforts for T/E species.

FOREST SERVICE RESPONSE CONTINUED

J All bald eagles on the Forest are treated as endangered and will be managed for species recovery, regardless of origin.

K Although nest habitat is protected in all alternatives, the FEIS better discusses that fact in Chapter II, Section D5c. As indicated in the same section, the Montana Bald Eagle Management Plan (MBEMP) will be a driving document for long-term management direction for the bald eagle on the Lolo Forest.

L Lolo Forest philosophy for designating and managing essential bald eagle habitat has been to treat all National Forest lands bordering the Clark Fork, Blackfoot and Clearwater rivers as potential winter roosts, feeding areas and nest sites. Communal roosts and feeding sites have been inventoried, and the Forest participates in annual nest surveys. Regardless of that inventory, all projects within potential nest habitat are approached with the assumption that the site may be critical to the recovery of the eagle.

WM - G - 9
(p. 6 of 8)

Although many of those recommendations have been incorporated in the new DEIS, our comments regarding Forest Policies 2, 10, and 13 and Forest Standards 4 and 26 still apply. M

DEIS

Page I-8 WILDLIFE

The gray wolf is incorrectly listed as a threatened species. The gray wolf is classified as an endangered species in Montana and in the entire lower 48 conterminous states, except for Minnesota where it is classified as threatened. N

Page I-9 LANDS - Issue No. 2/Management Concern No. 1

This issue and management concern discuss powerlines located on the Lolo NF and the need for guidelines on the issuance of special use permits for such uses. Powerlines carrying between 5 and 69kV can pose an electrocution hazard to bald eagles and other large raptors unless steps are taken to assure that such lines are raptor-proofed. The publication "Suggested Practices for Raptor Protection of Power Lines - The State of the Art in 1981, Raptor Research Report, No. 4" details research on raptor electrocutions, and design modifications to prevent electrocutions. This publication is available from the Raptor Research Foundation, Inc., University of Minnesota, St. Paul, Minnesota 55108. Powerlines may also present a serious collision hazard for bald eagles and peregrine falcons, especially when such lines cross or parallel riparian areas that support waterfowl concentrations and/or are within migration routes for these endangered raptors. Guidelines developed for the issuance of special use permits should specify:

1) all powerlines between 5 and 69 kV are built according to the raptor-proofing specifications provided in Raptor Research Report No. 4; and

2) powerlines that cross or parallel riparian areas are clearly marked to increase visibility to raptors and prevent raptor collisions. O

Page II-2 Wildlife

Both Management Areas 20 and 20a have the management goal to "Optimize habitat conditions and minimize mortality factors consistent with the national goal to recover the grizzly bear to nonthreatened status." These two areas should be included with those Management Areas emphasizing wildlife. P

FOREST SERVICE RESPONSE CONTINUED

M Concerns about grizzly bear use in nonessential habitat have been incorporated into Forestwide Standard No. 24 in the Forest Plan. Comments about road management have been incorporated into Forestwide Standard No. 52, which now states that the presence of threatened or endangered species will also be used to make road management decisions. The Forest agrees that consultation is required on all lands (not just essential habitat) where land management activities may impact threatened or endangered species.

The comments regarding other specific Forest policies and standards were considered in preparation of the final Forest Plan. They are included under the Forest-wide Management Direction, Chapter II of the Forest Plan.

N The classification of the gray wolf has been corrected from "threatened" to "endangered" in the "WILDLIFE" portion of Section D, Chapter I of the FEIS.

O Project level specifications for power corridors are very lengthy and are not included in the FEIS for that reason. The publication recommended is now a part of the data base and will be used in all project activites where threatened and endangered species or waterfowl are an issue. Direction to utilize such activity constraints is provided in Forest Plan Standard No. 27. Raptor/powerline guidelines will be used at the project level, to make contractual stipulations to protect the bald eagle.

P Because of public sensitivity to the grizzly bear, the map and direction segregate the grizzly from other wildlife allocations for public clarity.

WM-G-9
(p 7 of 8

Page III-25 Peregrine Falcon

This discussion should make it clear that peregrine populations are not increasing by themselves in the Rocky Mountains, but are increasing only because of intensive reintroduction efforts. Q

Page III-26 Bald Eagle

Non-habitat related factors such as "illegal killing and imprudent use of pesticides" are serious threats to bald eagles, but the most significant threat to bald eagle recovery and long-term maintenance of recovered populations is the loss of suitable habitat. R

Page IV-9. 1. Threatened and Endangered Species

The DEIS states, "For the peregrine falcon, eagle, and wolf, habitat enhancement is not a significant factor in bringing about population recovery. The reason for this is that other non-habitat related factors have led to their decline and in turn must be resolved before recovery can be accomplished.... Most of the recovery efforts for these species on the Lolo involve protection instead of habitat enhancement.". It is true that factors other than habitat enhancement need to be considered when planning for recovery of T/E species. However, long term maintenance and protection of habitat is one of the most significant needs for recovery of the bald eagle, and extremely important for the peregrine and wolf as well. Protection of animals needs to be intricately tied with protection of habitat. S

Page B-39. 8. Threatened and Endangered Species Habitat

The language in Forest guideline No. 13 should incorporate the new language provided in the 1985 "Changes in the Proposed Lolo Forest Plan Resulting From Analysis in This Draft EIS." T

Page F.5. Appendix F. II Prescriptions - Wildlife - T&E

Prescription 3c addresses restrictions around bald eagle nests and roosts. Upon completion of the MBEMP, we recommend that you incorporate the guidelines therein into the management prescriptions for oil and gas leasing. U

Prescription 3d addresses the golden eagle. The golden eagle is not an endangered species. It is protected under the Migratory Bird Treaty Act and Bald Eagle Act, but not under the ESA. V

FOREST SERVICE RESPONSE CONTINUED

Q The role that peregrine falcon reintroduction has played in recovery has been explained in Chapter II of the FEIS.

R The sentence on page III-26 of the DEIS, implying that pesticides and human mortality outweigh habitat loss, has been deleted from the FEIS.

S The Lolo has stressed the importance of peregrine falcon habitat and its protection in the FEIS, Chapter II in the Threatened & Endangered Species section.

T The language referred to has been incorporated into Forestwide Standard 27.

U As soon as MBEMP is complete, the Forest will revise its stipulations based on the updated management information.

V The problem regarding designation of the golden eagle is corrected. It is covered under the heading "Wildlife, protected" in the oil and gas stipulations, appendix F, 3d, of the Lolo Forest Plan.

WM-G-9
(p 8 of 8)

We appreciate your cooperation and interest in meeting our joint responsibilities under the ESA. Please contact us if we can be of further assistance.

Sincerely,

Dale Harms

Dale R. Harms
Acting Field Supervisor
Endangered Species

cc: Regional Director, FWS (FA/SE), Denver, CO.
ES, Billings, MT.
Chris Servheen

United States
Environmental Protection
Agency

Region 8 Montana Office
Federal Building
301 S. Park, Drawer 10096
Helena, Montana 59626

WM-G-10
(p1 of 3)

EPA

FOREST SERVICE
LOLO NATIONAL FOREST
MAY 29 1985
RECEIVED

MAY 28 1985

REF: 8MO

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

The U.S. Environmental Protection Agency (EPA) has reviewed your "Draft Environmental Impact Statement (DEIS) - Lolo National Forest," and "Proposed Forest Management Plan." The Agency is pleased that you have prepared an overall Forest Plan to coordinate management of your natural resources. It is clear that you have spent a considerable effort to prepare these documents. The Agency's overall rating follows. Our comments are found in the attachment.

It is clear from our review of your documents that you anticipate extensive land development activities. For example, road mileage is doubling. This proposed development is expected to extend over many years. It is difficult, consequently, for EPA to respond in a completely meaningful fashion because much of what is presented is general, not specific information. EPA believes that meaningful review will require additional formal review once future proposed activities become more specific.

EPA will remain concerned with environmental issues as specific actions are undertaken in the Lolo National Forest. A The Agency is particularly concerned about the potential of your proposed activities to degrade water quality and diminish visibility from slash burning. B EPA especially supports the Forest Service's commitment in the DEIS that reads "Projects that will not meet State Water Quality standards will be redesigned, rescheduled, or dropped." This commitment, however, requires a commitment to undertake periodic and timely monitoring to include non-point source concerns. C

The DEIS refers to results of sediment modeling and water yield increase projections. How much data was used to validate the models? Will this effort receive sufficient continued emphasis? The budget for data collection appears small. D

EPA is assigning an overall rating of EC-2 (Environmental Concerns, Insufficient Information). The information provided to the Agency is too general to adequately satisfy EPA that implementation of your Forest Plan will not raise environmental concerns. The Agency also believes that additional data must be collected to support "use" decisions, and how to implement those "use" decisions to avoid unacceptable environmental impacts. E If you have questions or concerns, please call me at (406) 449-5432.

Sincerely,

John F. Wardell

John F. Wardell, Director
Montana Office

Attachment

FOREST SERVICE RESPONSE

WM-G-10

A Proposed development activities on the Forest extend over many years and recur as the timber resource is re-established. Each project necessitates an environmental disclosure document, usually an environmental analysis, which encourages public involvement and deals with potential environmental impacts associated with such things as road locations and harvesting methods on a site specific basis.

B Increased concerns with visibility considerations are evaluated and slash disposal operations are modified or delayed to maintain visibility. All slash disposal operations on this Forest abide by existing air quality regulations established by the State Air Quality Bureau. Presently, there are no existing Class I airshed regulations. When such are developed, the Lolo National Forest will abide by them.

C The Lolo Forest Plan monitoring and evaluation section describes the scope and frequency of the Forest's proposed water monitoring effort. Because land management activities have the potential to cause "non-point source" water quality impacts, the proposed water monitoring items are designed to detect this type of impact. Within the monitoring program, each item has a specific description of how the monitoring will be accomplished. A detailed description of the monitoring program is included in our planning records and is available on request.

Detailed monitoring plans are prepared each year based on management information needs, development schedules, public concern and problems identified in analysis of data from previous years. The budget proposed for monitoring water and aquatic habitat and presented in Forest Plan, Chapter V (Table V.2 Monitoring Plan Cost) was designed to provide a sufficient level of information to allow the Forest Management Team to evaluate management effects on the aquatic environment. Annual monitoring plans including schedules, objectives, procedures, quality control requirements and costs are available for review if specific details are desired.

D The Lolo has done site-specific water monitoring for the past six years (the same period that the Forest Plan has been in development). The sediment and water yield models used in the Forest Plan were developed before local data were available and rely on empirical data available in the literature.

E The Forest monitoring program does not monitor each project but does monitor on a sample basis representative of Forest management activities.

WM-G-10
(p.2 of 3)

ATTACHMENT

A. General Comments

1. The Forest Management Plan and DEIS deals adequately in generalized terms with environmental concerns. Areas proposed for roadless or wilderness classification should not pose significant man-caused environmental impacts. Most concerns are for impacts associated with areas scheduled for high intensity activity (e.g., agricultural use, forest harvesting, mineral development, and concentrated recreation).

2. Each specific development, sale or permit should be preceded by a specific detailed plan and environmental impact analysis. These reviews can then deal with specific elements of potential environmental impact such as road locations and construction, geological instability, harvest methodology, etc.

3. The budget figures for monitoring both water quality and quantity are quite small. A detailed monitoring program should be developed for at least the proposed alternative. The extent of monitoring should be consistent with background data needs, development schedules and problem identification.

4. We could not find Figure IV-2 in the Rock Creek Plan, but assume it would be the same as Figure IV-3 in the Deer Lodge N.F. Plan. History has shown that inadequate or poor installation and maintenance of road drainage controls are significant causes of sedimentation. Additional or improved structures and maintenance should be included to properly mitigate this potential water quality problem. F

B. Media Specific Comments

1. Present quality and classifications of surface waters must be maintained. G

2. Changes in concentrations of sediment or other water quality parameters must not exceed those allowed in the State of Montana Water Quality Standards. H

3. Erosion of stream channels associated with increased water yield or direct modification of the channel is not permitted. Approaches to avoid excessive erosion should be investigated and included in planning. I

4. Changes in use of geologically unstable areas should be avoided. Specific criteria to identify geologic instability should be developed. J

5. Livestock access to streams must be controlled to avoid excessive bank erosion. K

FOREST SERVICE RESPONSE CONTINUED

F Figure IV-2 in Chapter IV of the Lolo Plan is missing; it is the same as Figure IV-3 of the Deer Lodge National Forest Plan. It is correct that inadequate or poor installation and maintenance of road drainage structures have been significant causes of stream sedimentation. The Plan specifies strict requirements for the protection of water quality in Forestwide Standard Nos. 15 through 20 and No. 28. Forest Service roads, because of their nature and type of use, can become sediment-producers if not properly designed and maintained. When design flaws are noted they are corrected as dollars become available. Presently, each road design is reviewed to assure it meets the needs of the individual watershed. Each road segment is reviewed to assure it has the proper mitigation to abate sediment.

G The present quality of surface waters will be maintained. Forestwide Standard No. 15 states the Forest commitment to maintaining water quality. It is the responsibility of the State to establish surface water classifications.

H Forestwide Standard No. 15 commits the Forest to meeting or exceeding State water quality standards.

I Approachs to avoid excessive erosion and channel modification are included in site-specific project planning. Management Area (MA) standards (for example, MA 16 and MA 13) provide direction to protect stream channels and minimize erosion and sedimentation. In addition, Forestwide Standard No. 19 states: "Man-caused increases in water yields will be limited so that channel damage will not occur as a result of land management activities."

J Geologically unstable areas are avoided where possible. The Land System Inventory is the Forest's proposed means of identifying these areas.

K Livestock access to streams needs to be controlled. The management plans give emphasis to protection of riparian areas. Techniques used include placing salt a distance from immediate stream areas, moving cattle when utilization has been achieved and riding to make sure that the cattle are distributed over the entire allotment. Management plans also are designed to maintain or increase the shrub community along stream banks to reduce bank erosion.

UM-G-10
(p. 3 of 3)

6. Each proposed change in use must be preceded by collection of ambient base line data such as stream flow, suspended sediment, temperature and specific chemical constituents for those uses which could be expected to have water quality or quantity impacts (see general comment #3).

7. Projected water yield increase for the proposed alternative "d" for the decade 2021 through 2030, 138,500 ac. ft. (pg. II-65), exceeds the stream channel damage limit of 131,000 ac. ft. (pg. II-11). L

8. Increasing concerns with visibility (air) considerations, particularly in Class I areas (Wilderness areas), may require changes in present and proposed slash disposal. Slash disposal impacts on visibility should be periodically evaluated to insure that violations of air quality standards do not occur.

FOREST SERVICE RESPONSE CONTINUED

L The stream channel damage limit of 131,000-acre-feet is not an absolute value beyond which physical damage will occur; it is a calculated "threshold" of concern beyond which there is a potential for damage. The Lolo has stated its commitment, through statements of Forest policy and standards of operation, not to allow a permanent or long-term downward trend in water quality. In all Management Areas where timber harvest is specified, there is a management requirement that water yield increase as a result of vegetation removal will not result in channel impacts.

CO-G-12
(1 of 5)

United States Department of the Interior
OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL PROJECT REVIEW
Room 488, Building 67
Denver Federal Center
Denver, Colorado 80225

IN REPLY REFER TO:

May 28, 1985

ER 85/328

FOREST
JUN - 1 1985
RECEIVED

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

We have reviewed the revised draft environmental statement and related materials for Lolo National Forest, Montana. The following supplements our previous letters of August 18, 1980 and June 16, 1982, and provides comments on both the revised draft EIS and the proposed Forest Plan.

Threatened and Endangered Species

U.S. Fish and Wildlife Service's concerns about threatened and endangered species in connection with the DEIS and Proposed Plan are not discussed herein. The Forest Service has initiated Section 7 consultation with the Endangered Species Field Office in Helena. Comments on threatened and endangered species will be provided through the consultation process. Consultation results should be included in the final Plan and EIS. A

Fish and Wildlife Resources

As human population centers adjacent to the Lolo Forest continue to develop and private lands are subdivided, it is our belief that the public value of some forest-based resources and opportunities will continue to increase as they become more scarce in the private domain. We suggest that a primary consideration of future Forest management should be in watersheds, recreation, and wildlife. Activities like timber harvesting and grazing should be compatible and complementary. B

We were encouraged to see that the Forest policy for water and soils provides a hierarchical approach that will be used to achieve watershed protection on lands with intermingled ownership. We feel it is vital to consider the effects of off-forest, land-use practices when setting on-forest management goals. Because wildlife is also affected by off-forest activities in areas of intermingled ownership, we recommend that a similar Forest policy be developed with respect to wildlife. C

We are also encouraged to read the definition of recreation quality (p. 2) in the Forest Plan that acknowledges the value and importance of wildlife to outdoor recreation experiences other than hunting. We would like to see this aspect of human/wildlife interactions emphasized, encouraged, and planned. D

The "Elk Logging Study" has been completed and provides recommendations for coordinating elk and logging management. This cooperative report was signed by the Regional Forester, Northern Region of the U.S. Forest Service, and others; yet, we were not able

VI-87

FOREST SERVICE RESPONSE

CO-G-12

A Results of consultation between the Forest Service and the Endangered Species Field Office in Helena regarding threatened and endangered species are included in Chapter IV of the Final EIS.

B The National Forest Management Act of 1976 requires that when issues, management concerns or opportunities change, a Forest Plan revision is required. If the public value of some resources continues to increase, as mentioned, changes may be required in a future revision of the Forest Plan.

C The effect of off-Forest activities on big game is recognized in Chapter III of the FEIS and Forestwide Standard No. 23 has been revised to reflect this concern in the Plan. Wildlife impacts resulting from intermingled ownership, particularly on big game, require analysis at the project level. Where habitat improvement opportunities or protection of habitat for wildlife species are indicated, the Forestwide Standard will be utilized.

D The Forest is emphasizing non-hunting benefits of wildlife, as stated in Forestwide Standard No. 9. For example, a canoe trail featuring wildlife interpretation is planned at Seeley Lake. Threatened and endangered species habitat management is stressed, as described in Standards 24 and 27. Outfitter trips for non-consumptive use/appreciation of wildlife are being encouraged by the Forest. A variety of nature trails, such as the one on Blue Mountain near Missoula, exist and are encouraged when funds permit.

CO-G-12
(2 of 5)

to find either an acknowledgement of the study recommendations or a commitment to try to apply them. Other Montana Forests have included both in their Plans. We recommend that the Lolo Forest consider including language that would both acknowledge the study findings and commit to applying them. E

Appendix Q of the Plan provides a priority listing of streams on the Forest for which instream-flow rights will be sought. We realize that this listing is the result of much work and coordination between federal and state agencies. The establishment of minimum flows for streams on the Forest should help to protect aquatic resources found both on and off the Forest that are affected by activities on the Forest. We trust the Lolo Forest will continue to emphasize this important process. F

Riparian habitat is acknowledged throughout as having unique qualities that are important to many activities and resources on the Forest. It seems that more Forest activities are concentrated in this zone (per unit of area) than in any other. Often the interactions between human activity, grazing, and wildlife use in this area are profound. Riparian habitat is being severely degraded on some private lands. We strongly recommend that a Forest policy, as well as standards and guidelines, be established for riparian management. Also, riparian habitat should be included as a subject in the Monitoring Action Plan (p. 127, Table 4 of the Plan) in such a way that the entire width of the zone is considered. At this time, the riparian zone is monitored under a variety of subjects; e.g., range, fisheries, timber, etc. By montiroing riparian habitat in the current diffused way, it will be difficult to assess what is happening in this unique zone. G

With respect to stream-bank stability, water quality, and the timing of grazing in the riparian zone, recent research by BLM in Wyoming indicates that stream banks are most unstable when soil moisture is high, i.e., spring. Specifically, reduced cattle numbers in the riparian zone in the spring did not significantly reduce the total amount of bank slumping caused by cattle, and water quality was adversely affected. We suggest that cattle be kept away from streams with unstable banks during seasons when soil moisture is high until such time has elapsed that bank stability has been restored. H

Native Americans

Although copies of the Lolo National Forest Plan and draft Environmental Impact Statement were sent to the Confederated Salish and Kootenai Tribes, no mention is made of the fact that the Lolo National Forest is aboriginal territory of the Tribes. Because of this, the tribes have a vested property interest in Lolo National Forest lands. The Treaty of Hellgate, July 16, 1855, 12 Stat. 975, contains in Article III, the following wording:

> "as also the right of taking fish at all usual and accustomed places, in common with citizens of the Territory, and of erecting temporary buildings for curing; together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land."

The courts have construed such language to mean that Indians have reserved to themselves, on all open and unclaimed aboriginal territory, the right to graze livestock and to carry on other mentioned activities in common with non-Indians. To our knowledge, no formal consultation has taken place with the tribes concerning past or planned activities in this regard. We suggest both the plan and draft statement be revised to include such a formal consultation process and to consider the beneficial results thereof. I

FOREST SERVICE RESPONSE CONTINUED

E Three of the study areas for the Montana Cooperative Elk Logging Study were located on or closely adjacent to the Lolo National Forest. Findings from that study have been and will continue to be pertinent to the Lolo elk habitats. Findings from the study are being incorporated into the Forest Plan, Forestwide Standard No. 23.

F Applications for instream flow rights for streams listed in Appendix Q of the Forest Plan have been filed and the adjudication process is being conducted by the State Water Rights Bureau.

G It is certainly accurate to say that riparian areas receive a disproportinate share of the use and activity on the Forest, including recreation and livestock grazing. Standards have been developed for both of the riparian Management Areas (MA's), 13 & 14; also, refer to Forestwide Standard No. 28. Monitoring item 2-3 is designed to monitor activities in riparian areas.

H While stream stability can be maintained by fencing to exclude cattle, most of the allotments are too small to make fencing a viable economic option. For this reason, where stream bank problems are encountered, cattle exclusion is normally employed, and the area placed in MA 13 which includes the goals of maintaining and enhancing riparian areas, improving water quality and improving fisheries and wildlife habitat.

Cattle are usually prohibited from grazing until June 1 or June 15, depending on forage readiness. This is normally adequate to prevent collapse of banks if riparian shrubs are continuously present along banks. As Allotment Management Plans are developed or modified, the concern will be considered on a site specific basis. Each year Forest Service personnel make a range readiness inspection and if stream banks would be damaged by cattle, the grazing is delayed for a time.

I The Lolo recognizes the Confederated Salish and Kootenai Tribes' interest in their aboriginal territory. The Forest archeologist meets annually with members of both Tribes' cultural committees to discuss proposed Forest projects that may impact important religious or culturally sensitive areas currently used by tribal members. The Forest is aware of the Hellgate Treaty of 1855 and has not hampered tribal members from exercising their treaty rights.

CO-G-12
(3 of 5)

Mineral Resources

The treatment accorded to minerals in the subject Draft Environmental Impact Statement (DEIS) is cursory, contradictory in part, and in general, inadequate.

Although sections discussing minerals on pages I-11, III-29-30-31, and in table III-8 are acceptably well done, the Minerals section on pages IV-11 and 12 does not fully discuss the environmental consequences of mineral activity; in several places it contradicts material on pages I-11 and in table III-8, and in addition makes some statements that are generally inaccurate. We recommend that the entire Minerals section, pages IV-11 and 12, be deleted and rewritten with material closely patterned after the Minerals section, Chapter IV, in the revised DEIS for the Beaverhead National Forest. J

Also, it must be recognized that management practice may impose varying degrees of access and development restrictions, with consequent impacts upon minerals. This fact should be addressed in the Minerals sections in the Description of Alternatives, pages II-22 to II-41. It is suggested that all minerals sections be prefaced with the following:

> In general, lands not covered by withdrawals, segregations, and classifications are legally available for exploration, for staking locatable minerals, and for mineral leases; however, roadless areas may be relatively unavailable as a result of management practice limiting access on these lands. K

Water Resources

The environmental statement should address ground-water resources and related impact potential to a greater degree. A summary of the occurrence, quality, and use of ground water on the Forest should be included in the description of the affected environment. Sources of potable water for visitors, for recreational areas, for staff, and for residents in areas or communities surrounded by or adjacent to the Forest should be discussed. L Management measures to ensure good quality drinking water should be addressed. Sewage treatment facilities and processes should be included in the analysis. M

Land Adjustment Program

The EIS should expand the discussion on the Land Adjustment Program. Are there areas of forest land that would be appropriate for disposal? Are there private lands that are important to acquire to enhance forest programs? Developing criteria for selecting land to be acquired or disposed of would be helpful in establishing a viable Land Adjustment Program. N

Additional, specific comments on the proposed Forest Plan and revised draft EIS are enclosed.

Sincerely,

Robert F. Stewart

Robert F. Stewart
Regional Environmental Officer

Enclosure

FOREST SERVICE RESPONSE CONTINUED

J The minerals section in Chapter IV has been rewritten to more fully analyze the environmental effects of mineral development.

K The effect of the management practices by alternative is noted in Chapter II. The sections have been expanded to include the three categories of minerals.

Forestwide Standard Nos. 33, 34 and 35 discuss the concerns expressed in the suggested preface under Mineral Resources.

L Most Forest land management activities have a very low potential for affecting the quality of the ground water resource. Where such activities as mining, ore processing or sewage disposal take place on Forest land, the effect on ground water is evaluated. Very little information is available on the general ground water resource on National Forest land.

M All potable water supplies on the Forest are constructed, maintained, monitored and operated in compliance with the EPA Safe Drinking Water Act of 1974 and subsequent amendments. These regulations govern all potable water supplies in the National Forest system.

N Areas appropriate for disposal and acquisition are identified on the Land Adjustment Map which is part of the Forest Plan. Its complexity prevents its inclusion in the published document, but it is available for review upon request from the Forest. Criteria for acquisition and disposal are included.

CO-G-12
(4 of 5)

SPECIFIC COMMENTS

Proposed Forest Plan

On page 3 of the Plan, under Wildlife and Fish #8, we recommend that the timing of human activity be regulated near wildlife features so that the features remain available to wildlife during those seasons when they are needed. Also, that the availability of the features via traditional trails not be blocked. Under #9, page 4, calving areas should be considered as well as winter range. Under #12, it is not clear where "control" situations will exists "normal" population densitites can be established for indicator species of snag-using species normally found in unmanaged forests. O P Q

On page 17 of the Plan, Table 3: Additional Data Requirements and Accomplishment Schedule - We assume the accomplishment dates will be adjusted to reflect some point in the future. R

On pages 127-131 of the Plan, Table 4: *Monitoring Action Plan* - We concur with the State of Montana that expected costs of all monitoring activities should be shown in the Table and the phrase "no increase" should not be used. S

Within Management Area 14, we strongly recommend that sensitive areas be fenced to exclude cattle when the presence of cattle is shown to cause adverse impacts to water quality, stream bank stability and vegetation, as well as riparian shrubs and tree regeneration. We recommend that the concentration of livestock in riparian areas during moist seasons be prevented by fencing if necessary. H

We question whether average annual use will provide sufficiently for wildife needs during severe winters. If forage reserves greater than the average-use amount were available in the winter on the Forest, perhaps big game would tend to stay on the Forest and thus reduce off-Forest conflicts. Average-use has been stipulated in the Plan as a guideline for Management Areas 18, 19, 22, and 23. T

On page 38 of Chapter IV: Rock Creek under #4 (other erosion control activities), we recommend that the phrase "and appropriate state and federal agencies" be inserted after the words "fishery biologist." U

Revised Draft EIS

The first paragraph of Item 10 of page II-67 should better define the differences between locatable and leaseable minerals on public domain versus acquired lands (where normally locatable minerals are leaseable). V

We also suggest that you cover the nonmetalliferous minerals that are open to location under the mining laws, such as sapphires, some building stones, some clays, limestone, talc, vermiculite, gypsum, graphite, etc. W

The Minerals section on page IV-11 should be revised to provide a more balanced perspective. For example, the use of the word "drastic" seems a little strong, and the word "would" turns possible impacts into probable impacts. Also, the statement regarding "waste deposits" (last paragraph) needs to be clarified. X

FOREST SERVICE RESPONSE CONTINUED

O New wording in MA 26 under "road" provides for timing restrictions. In addition, critical elk habitat is treated as MA 26, regardless of whether it is an area which is large enough to map or an area which is a site specific inclusion. Preventing such areas from becoming "blocked" is a goal of MA 26. Such areas, including the immediate zone of influence, will not be entered for management purposes unless done for elk habitat enhancement purposes. This is displayed in Forest Plan MA 26, management goal 1.

P Calving is, in some areas, a significant concern in the overall management of elk. On the Lolo Forest, however, there are no documented locations where elk calve regularly, year after year. The topography of the Lolo is such that slopes tend to be long and continuous. Snow depth variability from year to year may cause elk to inhabit elevational zones anywhere from 3000 to 5000 feet during the calving period, resulting in different areas being used in different years. Consequently, there are no specific provisions for calving habitat in the Forest Plan. However, on a project level, protective measures may be employed to secure a site utilized by elk for calving grounds in a given year.

Q "Normal" populations were meant to depict snag-user populations in an old growth, unmanaged forest situation.

R The accomplishment dates are adjusted as shown in the Plan in Table II.3.

S The monitoring plan has been revised to indicate a more complete cost. "No increase" will not be used. Refer to Chapter V in the Plan.

T The term "average annual use" describes the forage produced per acre and the area used in an average winter. More range area is used by elk during average winters than during severe winters, so allocating land on an "average" basis rather than a "severe" basis will approximately double the total winter range area. The winter range allocations in the Forest Plan include nearly all land on the Forest which is potentially suitable for winter range, and are designed to optimize forage produced on each given acre.

U The Forest Plan states, in Forestwide Standard No. 1, that existing regulations and agreements with other agencies will be respected.

V The following sentence has been added addressing minerals on acquired lands: "All minerals on lands with acquired status are leasable."

W The word "metalliferous" has been changed to "locatable," which takes into account the nonmetalliferous minerals which also may be developed under the provisions of the 1872 Mining Law.

X The minerals section in Chapter IV has been completely rewritten.

CO-G-12
(5 of 5)

The first paragraph on page IV-12 states that pits, drill sites, waste deposits, and roads are not easily rehabilitated. It has been BLM's experience that they can completely rehabilitate 98 percent of the sites to the original condition. The remaining 2 percent require special measures but rehabilitation to their original condition can still be achieved. Y

On page C-294, it is stated that there are no mining claims within the Welcome Creek area. We believe that there is at least one claim that is presently being contested, and suggest you contact Bob Newman of the Forest Service Regional Office for further information. Z

FOREST SERVICE RESPONSE CONTINUED

Y The ability to achieve reclamation of disturbed areas is very much dependent on the individual site geology, slope, rainfall, etc. Rehabilitation of range lands and forest lands cannot be equated, due to the inherent differences.

Z The roadless area described in C-294 is a small addition to the existing Welcome Creek Wilderness Area. While the Welcome Creek Wilderness Area does contain several mining claims within its boundaries (including four being contested), the roadless addition does not.

CR-G-13
(1 of 2)

Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

In reply refer to: SJ

JUN 5 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
JUN - 5 1985
RECEIVED

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
USDA Forest Service
Bldg. 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

We have reviewed the Revised Draft Environmental Impact Statement (EIS) on the Lolo National Forest Plan. In general, we were very favorably impressed with your innovative forest planning system. Specific suggestions and recommendations are listed below.

1. We recommend that the comparison of alternatives discussion, pages II-40 to II-94, include an evaluation of the effects on energy transmission corridors (existing and potential). A

2. To assist the reader, we suggest that existing as well as potential corridors (corridor windows) be shown on the alternative maps. We have marked the EIS's "Alternative a" map to highlight the existing Bonneville Power Administration (BPA) lines as well as major east-west corridors identified by BPA and the Forest Service in the 1979 Pacific Northwest Long-Range East-West Energy Corridor Study. We have also enclosed a highlighted copy of a corridor map from the Western Regional Corridor Study prepared by the Western Utility Ad Hoc Group. B

3. We recommend that consideration be given to designating the existing high voltage transmission lines that cross the Lolo National Forest as utility right-of-way corridors (36 CFR 219.13(b)(10)). We feel strongly that existing right-of-way corridors should be designated even though a study has not been made of their suitability for joint use. This will facilitate their consideration in the land management process. We would be glad to provide any technical information you may need. C

4. We could find no management direction given on microwave radio station and hydromet sites. BPA has several such sites located on the Lolo National Forest. D

FOREST SERVICE RESPONSE

OR-G-13

A A discussion of the energy corridors (existing and potential) has been added to Chapter II (Section D14), and includes: the status of designating corridors; the potential corridors indentified in the draft Pacific Northwest Long Range East-West Energy Corridor Study, Phase I, Bonneville Power Administration, December 1977, and a comparison of effects by alternative plan. A discussion of environmental consequences has been added to Chapter IV, under Utility Transportation Corridors.

B The discussion in Chapter II includes a brief description of the lands crossed by the corridor "windows." As these windows do not change by Forest Plan alternative and they are displayed in detail in the referenced publication, they are not shown on the Forest Plan alternative maps. This helps to minimize extraneous lines and confusion when using the maps for management comparisons.

C Guidance for the designation of corridors is provided in the FEIS, Chapter IV, under Utility Transportation Corridors (Section I6). Final designation of corridors on the Lolo National Forest will be made consistent with direction from the Chief's Office, Forest Service. This national direction is under review and is being coordinated with others to attain consistency among the various government agencies.

D Management direction for land uses such as electronic sites (radio, hydromet, etc.) is provided in Forest Plan Appendix J, "Guidance for Issuance and Administration of Special Use Permits." In addition, the Management Area Standards contained in each Management Area discussion (Forest Plan) provide direction. Although many of these standards do not address special uses as a separate entity, those pertaining to roads, clearing, visuals and other activities do provide insight into acceptable use of the land in the given Management Area.

OR-G-13
(2 of 2)

5. Finally, we recommend that you include a discussion of potential energy resource development (particularly renewable resources such as small hydroelectric, hydroelectric, biomass, etc.) in the management plan and EIS. E

Thank you for the opportunity to review the draft EIS. If you need further information, please contact Timothy J. Murray, Chief of the Environmental Analysis Branch, at this address or at 503-230-4528 (FTS 429-4528).

Sincerely,

Anthony R. Morrell
Environmental Manager

2 Enclosures

cc:
Earl Reinsel, USFS, Region 1, Missoula, Montana
J.W. Couture, Manager, Real Estate Department, Montana Power Company

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FOREST SERVICE RESPONSE CONTINUED

E Potential energy resource development (small hydroelectric, hydroelectric and biomass) is not specifically addressed in detail because proposals of this nature are generated externally, are based on profitability and would require an in-depth analysis and EIS in response to a request (proposal). Streams are available for hydro development, but when instream flows are reserved to satisfy environmental needs, opportunities diminish. The rivers have been and are currently under study by the Corps of Engineers. To our knowledge the most recent studies have not identified high development potential for sites that would directly affect Lolo National Forest lands.

The potential for biomass conversion to energy increases in alternatives with high timber harvest programs: availability of timber harvest waste products increases, and generally better access means more economical retrieval and transportation of waste material. Alternative c has the highest potential for biomass availability, with Alternatives a (Current Direction), e, d (Proposed Action), f, b, g, following in descending order. To date, there has been no serious inquiry on biomass/energy conversion availability, and neither hydro nor biomass development has been raised as an issue on this Forest.

WM - G - 16
page 1

State of Montana
Office of the Governor
Helena, Montana 59620

TED SCHWINDEN
GOVERNOR

LOLO NF

JUN 19 1985

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June 18, 1985

Mr. Orville Daniels, Supervisor
Lolo National Forest
Building 24
Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

The State of Montana appreciates this opportunity to review and comment on the Draft Lolo National Forest Plan (Plan) and Environmental Impact Statement (EIS). Your agency's cooperation and presentation of the Plan to Montana's Interagency Planning Task Force and Ad-Hoc Forestry Committee is also appreciated. The attached comments reflect the task force review and concerns regarding the Plan.

In general, we are disappointed in the decline in the readability and data presentation in the EIS from past statements prepared by the Lolo National Forest. In addition, inconsistencies in the information presented regarding the proposed timber harvest levels have made it difficult to evaluate the consequences of the proposed Plan.

We look forward to your consideration of and response to the attached comments in the Final Plan and EIS.

Sincerely,

Ted Schwinden
TED SCHWINDEN
Governor

Attachment

WM-G-16
page 2

MONTANA COMMENTS ON THE 1985 DRAFT LOLO NATIONAL FOREST PLAN AND ENVIRONMENTAL IMPACT STATEMENT

Overview.

In general, the revised Draft Environmental Impact Statement (DEIS) represents a decrease in readability and data format when compared to previous draft Plans developed by the Lolo National Forest (LNF). Careful reading is required because in many instances the context is difficult to follow. This leaves the reader uncertain of the intended meaning of important DEIS statements and greatly increases the potential for misinterpretation. A

It is difficult to assess the success with which the LNF has addressed the state's previous comments on the 1982 draft LNF Forest Plan. Regardless, many concerns remain:

- The Plan does not appear to support the preferred alternative's goal to manage "in a cost-effective manner."
- Projected significant increases in road building may jeopardize the high quality watersheds and blue-ribbon fisheries on the LNF, as well as nationally recognized big-game habitat and hunting opportunities.
- An already limited amount of important elk security cover could be further reduced through accelerated timber harvest proposals in selected areas.
- The Plan lacks an adequate commitment to watershed monitoring and inventory activities, and does not clearly state when, where, or how the sediment or fisheries data specific to the LNF will be collected to accomplish the necessary calibration of sediment yield models used in the DEIS.
- Wildlife-related recreation values used to estimate economic impacts are significantly understated.
- The Plan fails to include non-resident visitor projections when predicting recreation visitor days, thus significantly underestimating the anticipated increases in recreational use on the LNF.

These and other concerns are detailed in the following comments:

FOREST SERVICE RESPONSE

WM-G-16

Overview

A In order to provide consistency, all Forests in Region 1 use the same format for Environmental Impact Statements (EIS). Therefore, the format can not be changed, but the way the format is displayed can be changed. In the Final EIS (FEIS) the layout has been redesigned to improve readability.

WM-G-16
page 3

1. Wilderness.

The preferred Plan proposes to add 211,930 acres of wilderness to the LNF in the Hoodoos, Swan Front, Monture and Quigg areas. We urge the planners to consider the Governor's May 10, 1984 wilderness recommendation to the Montana Congressional Delegation for a 227,150 acre addition to the LNF portion of the wilderness system as follows:

Area	Acreage
1301 Great Burn	91,600
A1485 Clearwater-Monture	67,000
1784 Cube Iron	32,900
1805 Lolo Creek	3,990
1806 Welcome Creek Addition	1,100
1808 Stony Mountain	30,560
TOTAL	227,150

Roadless and wildlife or grizzly bear habitat management proposed by the Plan for other areas included in the Governor's recommendations, generally would not conflict with Wilderness designation. Development activities planned for these areas should not be implemented until the Wilderness issue is resolved by Congress.

B

FOREST SERVICE RESPONSE CONTINUED

The following text responds to the State's concerns and questions under the appropriate topic.

B Wilderness

The Draft EIS reviewed 776,190 acres of roadless land. Of these, the Forest recommends 223,600 roadless acres for wilderness.

Approximately 90,000 acres in the Hoodoo roadless area (01301) are recommended for wilderness. This includes 7,680 acres in Irish Basin/Cache Creek.

In the Clearwater-Monture roadless area (A1485), 69,250 acres are recommended for wilderness. An adjacent 17,222 acres are designated for roadless management. This combination provides a well-defined topographic boundary.

Wilderness designation is recommended for a portion of the Lolo Creek roadless area (01805). This is a change from the draft statement.

The Cube Iron area (01784) is not recommended for wilderness designation. However, 36,500 acres will remain roadless. During the next decade 1,600 acres have the potential to be developed. The developed acres will be managed to meet a variety of resource objectives. The resource receiving the main emphasis is wildlife. Almost 10,000 acres will be managed for winter range and critical grizzly bear habitat.

The Welcome Creek roadless addition (01806) will be managed for wildlife. The timber is classified unsuitable and roads will not be constructed. Fire will be a primary tool for improving and maintaining wildlife habitat.

The Stony Mountain Roadless Area (01808) is not recommended for wilderness. This roadless area is located on the Deerlodge, Bitterroot and Lolo National Forests. Most of the lands on the Lolo will retain roadless designation. Of the approximately 35,000 acres, only 4,000 acres are scheduled for development. The nearby Quigg Roadless Area (01807) has 60,830 acres recommended for wilderness.

READEX FICHE

wm-G-16
page 4

2. Tourism and Outdoor Recreation.

Tourism and outdoor recreation are growing industries that are dependent upon scenic values coupled with outdoor recreation opportunities. The LNF has a substantial potential for providing more opportunity for dispersed and developed recreation in Montana. Unfortunately, investments for new recreational improvements are minimal in the Plan, even though many of the existing sites are not at or near capacity at certain times. Further, it is not clear whether the $1 million needed for existing facility maintenance and replacements (p. 11 DEIS) is available. C

a. Alternatives.

Despite the development of different alternatives, anticipated recreation use and costs are identical in each. This infers that recreational use is constant despite management direction, and is not a function of roads, timber harvest, or any other management action. It also infers that use will increase linearly over time, regardless of the alternative chosen. Recreation is an important use of all Montana National Forests, including the LNF. The alternatives developed should reflect a range of recreation options, rather than treating recreation as a static resource. D

b. Recreation Capacity and Quality.

Recreation capacity both for dispersed and developed recreation is stated to exceed projected demand on the LNF. This conclusion needs to be supported with quantified data, especially since excess capacity seems to be used to justify the decision not to improve or construct additional recreational facilities. We suggest the LNF maintain the flexibility to respond accordingly if levels of use exceed expectations. E

Even with excess capacity, the quality and availability of the recreation experience and opportunities can be improved. As the DEIS acknowledges, capacity of an area to accommodate recreationists should not be equated with quality, since quality is associated with setting and improvements.

Tourism and Outdoor Recreation

C There is high potential for expanding dispersed and developed recreation on the Forest. However, budgets are limited and the Forest will concentrate on improving existing sites before developing new sites. The facility maintenance need of $1 million will be met over time with priority placed on facilities where use is high. For example, two of the recent improvement projects were Big Larch campground and Morrel Falls trailhead. When facilities are improved, attention is given to upgrading accessibility for the handicapped and elderly. Low use sites will be maintained at minimum service levels.

D (a.) Expected recreation use measures future demand in Recreation Visitor Days (RVD's). In all alternatives the demand can be met by existing recreational capacity. Therefore the demand level appears constant. Likewise, the expected costs are constant because the number of developed sites can also meet future demand.

RDEIS Table II-39 (FEIS Table II-44) displays expected recreation use as the same under all alternatives. As presented, recreation use does not change by type or over time from one alternative to the next. In reality, recreation use would change by alternative. For example, it is logical to expect a change in the type of recreation use when a drainage is managed for wildlife winter range instead of livestock grazing.

Identification of recreation use by drainage or other land subdivision is not possible as the model aggregates expected recreation use by type on the Forest as a whole. To provide insight into how recreation use changes by alternative, Table II-9 has been added. The Table displays the recreation opportunity class under each alternative.

E (b.) At most developed facilities, current use is considerably less than capacity. The Forest will be able to accommodate substantial increases at these facilities before demand exceeds supply. These underutilized campgrounds will be maintained at minimum service levels and improvements will not be made until use increases. Improvements will focus on the facilities receiving heavy use. National Forest Management Act (NFMA) regulations provide the flexibility to respond to levels of use different from those projected in this analysis. More specifically, 36 CFR 219.10 provides for optional short term revisions, a mandatory 5-year review and a 10 - 15-year Forest Plan revision.

The conclusion that capacity will exceed demand can be substantiated through the Forest Recreation Information Management System. This system was used during preparation of the DEIS and the Forest Plan, and is reflected throughout the discussion and tables on recreation.

wm-G-16
page 5

c. Trails.

The Plan does not indicate the amount of existing trail mileage that will be lost to proposed increased road building. Since 1950, approximately 1,600 trail miles have been lost on the LNF, and there is a possibility of further decreased trail mileage. In addition, funds appear limited for new trail construction. This item should be clarified in the Plan. F

d. Recreation Use Projections.

It is erroneous to assume that increased recreation visitor days (RVDs) is a function only of Montana's population. Recreation projections should be based on both Montana population trends and non-resident visitor projections. Increasing numbers of non-residents are projected to visit Montana to avail themselves of outdoor recreation, particularly since similar opportunities are diminishing in other states. RVDs are therefore likely to be significantly underestimated. The Montana Department of Commerce can assist the LNF in developing revised projections for inclusion in the Plan. G

e. Recreational Values.

The values shown in the DEIS for Wilderness and other dispersed recreation visits (Appendix B-29) appear low, particularly relative to the other forms of listed recreation. More information should be provided to show how the LNF determines these values. H

FOREST SERVICE RESPONSE CONTINUED

F (c.) A reduction in trail miles is not anticipated. Many future roads will be closed because the Forest is reaching the limit of open road miles recommended in the Plan. Where existing trails are interrupted by a road or logging unit, the tread will be restored to retain the primitive and, often times, more direct access. Impacts also will be minimized by retention of screening vegetation and, if necessary, by trail relocation.

G (d.) The Regional Office developed recreation use projections for the Forest and these projections included recreation use by nonresidents. The projections correlated historical recreation use by residents and nonresidents with historical population levels. The correlation factor then was applied to projected populations levels to estimate projected recreation use.

Recreation use projections are based on figures developed for Western Montana and divided amongst the four Forest's located in this area.

H (e.) The Recreation Visitor Day (RVD) values are by recreation type and based on willingness to pay (WTP) values. They were determined through studies contracted by the Washington Office for use in Forest Plans and RPA. While the values may appear low in comparison to timber, it is important to understand what these values represent. WTP values estimate what the recreationist would be willing to pay for a particular experience at the point of use. In this case, the point of use is arrival on the Lolo National Forest. Point of use does not include expenditures for travel, equipment, lodging, etc. The latter expenditures are called input-output coefficients. Thus, there are two distinct analyses that use recreation values. The WTP values are used in the economic efficiency analysis which compares the values of various resources. Input-output coefficients are used in the impact analysis which traces the effect of recreation activities on the local economy in terms of jobs and income. Both analyses have been used in the DEIS.

f. Access.

Separate motorized and non-motorized use areas should be designated to reduce user conflicts in the proposed recreation management areas. Existing and developed roads may be used for cross country skiing, hiking, horseback riding or handicapped access even if they are closed to vehicle access. I

g. Hunter Opportunity.

Lengthy hunting seasons are an important part of the big game hunting tradition in Montana. Increases in forest road access along with reductions in cover may necessitate shorter, more restricted hunting seasons. This reduction in hunting opportunity is in conflict with the Department of Fish, Wildlife and Parks (DFWP) management goals for big game hunting. The LNF should make every effort to reduce adverse impacts on hunter opportunity. J

The proposed addition (in the second edition of the Errata under "a. Dispersed Recreation" in Chapter II-DEIS) discussing hunter recreation is confusing and appears incomplete. The discussion implies that the different alternatives will affect big game hunter recreation opportunities only on wilderness and semi-primitive non-wilderness, roadless lands. However, data supplied by the LNF for 1983 shows that the largest percentage of hunting occurs in roaded areas. This should be clarified in the Plan. K

FOREST SERVICE RESPONSE CONTINUED

I (f.) Both motorized and nonmotorized recreation are legitimate uses of the Forest. When uses can be separated in time and space, and it it reasonable, the Forest attempts to do so. Additional regulation is not always appropriate if not supported by increased costs or public attitudes.

Approximately 30 percent of the Forest is retained for nonmotorized recreation. Roads closed to vehicle use may be used for cross country skiing, hiking, horseback riding, handicapped use or other dispersed recreation activities.

J (g.) Forestwide Standard No. 26 supports the importance of long hunting seasons to the Montana Department of Fish, Wildlife and Parks (MDFWP). The intent is to maintain access at or near current levels through road management. In addition, Forestwide Standard No. 52 provides the criteria for development of the Travel Plan. Two primary criteria are optimizing big game production and providing a variety of hunting recreation.

Several other Forestwide Standards, Nos. 6, 8 and 23, reflect the Forest's commitment to improving hunter opportunity. As an example, Forestwide Standard No. 23 states that the document "Coordinating Elk and Timber Management," which summarizes the results of 15 years of interagency elk/logging research, will be used as a basic tool for assessing the effects of timber harvest upon elk habitat, and for making decisions that affect the overall big game resource.

K The Errata published with the DEIS has been incorporated into the FEIS. The dispersed recreation section in Chapter II, Section D1a, has been rewritten and now notes the effect of different alternatives on big game hunter recreation opportunities in roaded areas.

The analysis of Forest Plan impacts on MDFWP hunting districts is contained in planning records and available on request. The Errata contained only an example of this analysis.

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3. Roads.

Collector and local road miles are projected to more than triple during the next 12 decades. Roads are the major cause of stream sedimentation and erosion, and also reduce wildlife habitat security. Half of the LNF is highly erodable, and sedimentation limits may be approached during the second decade. The LNF should reduce proposed roading increases by intensification of timber management on the most suitable sites. Additionally: L

- o Although the Plan provides for a significantly increased amount of roads on the LNF, only slight increases in sediment are projected. This is inconsistent and needs a better explanation in the Plan. M
- o Some of the visual management strategies, such as treating cut and fill slopes with a darkening agent, seem expensive and unnecessary. If the number of new roads can be reduced, less emphasis on visual constraints would be appropriate. N
- o Increased road access to formerly secure big game habitat, combined with increased hunting pressure, can result in hunting season restrictions and reduced hunter opportunities on the LNF. This must be addressed in the discussion on road-related impacts in the Plan. O
- o Consideration should be given to permanent road closures (e.g., obliteration) in areas where there are problems with vandalism of gates. P
- o On p. S-13 under Roads, many of the "temporary" roads are useable for access, but are not included in the LNF's calculation of open road density. Nine hundred miles of temporary road access across the LNF would greatly increase the miles of open road per section. Q

FOREST SERVICE RESPONSE CONTINUED

L **Roads**

To reduce roading by intensifying timber management on the most suitable sites is not cost-effective. Often the initial investment required for intense management practices can not be recovered in the subsequent timber harvests. Intense practices will be applied when the costs can be recovered or future losses prevented, i.e., volume loss due to insect and disease problems. The benefit of intensive management, increased volume, would not be realized for many decades and will not satisfy today's timber demand.

Improved future technology may reduce road miles. Logging methods that increase yarding distances would in turn decrease the number of roads required.

M o The Forest recognizes road construction and timber harvests can increase sediment. Sediment mitigation measures such as revegetation and road surfacing will be used to limit sediment increases. Specialized mitigation measures will be applied more extensively on sensitive soils. On DEIS page I-8, the statement about half the soils on the Forest being stable with the remainder being highly sensitive is grossly in error. Less than 10 percent of the Forest soils are classified as "more sensitive." This includes 65,340 acres of granitics; 43,727 acres of glacial tills; 23,424 acres of lacustrines, and 1,446 acres of highly erosive belts.

Forestwide Standard No. 15 commits the Forest to maintaining Federal and State water quality standards through the application of best management practices. A strong monitoring plan has been designed to guarantee water quality standards are met.

N o The Lolo Forest does not plan to use darkening agents for visual mitigation of road cut and fills. It is an exotic technique that would be applied only to avoid an unacceptable visual quality change.

O o Increased and unrestricted road access can reduce big game security. The Forest Plan is designed to maintain adequate hiding cover and to restrict access with road closures. Current levels of open road density will be maintained through road closures. A discussion of roads and the related impacts is found in Chapter IV, Section O, of the FEIS.

P o The Forest is not having major problems with the vandalism of gates. The Forest has been successful in gaining support through public input into the Travel Plan and the prosecution of offenders. When gates fail to prevent access, other closures will be implemented. Surface obliteration is unlikely if a road will be needed in the future; however, there are exceptions. Recently some roads constructed by the Bonneville Power Administration were obliterated, including one road to be used in the future.

Q o The Forest estimates that 50% of the "temporary" roads have revegetated or are part of a larger closed road system. As timber sales are prepared in areas with temporary roads, each road will be evaluated. Either the road will be classified as a local road and become part of the transportation system or the road will be obliterated.

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4. Water Quality.

Tables II-9 and II-10 in the DEIS show projections of water meeting "Quality Goals." However, Management Concern No. 1 (p. I-8) indicates that a basic policy statement on water quality standards is yet to be developed. An explanation of how projections can be made without a basic policy statement is needed. R

The land system inventory and water improvement needs inventory (p. II-19 DEIS) are necessary to make the projections in Tables II-9 and II-10. They are also essential to a responsible monitoring effort. The Plan should indicate when the inventories will be available. S

Issue No. 2 (p. I-8 DEIS) indicates that there is a public question regarding the level of water quality to be maintained in various drainages. The Plan should indicate that site specific Best Management Practices (BMPs) will be developed, implemented and proven at the project level. Projects that cannot meet state water quality standards should be redesigned, rescheduled, or dropped. Suitable BMPs are especially important on the LNF because of the valuable downstream fisheries. T

Although the Plan generally made very good use of the FORPLAN model, soil and water constraints should have been included in the timber and range benchmark, since water quality standards are actual legal constraints. Cooperative watershed management should be stressed in areas of checkerboard ownership to prevent water quality and sediment standards from being exceeded. U

A recent Forest Service summary report of the watershed policy and review for the northern region states that: "Watershed monitoring and inventory activities are presently being funded significantly below estimated low level needs. At present funding levels, monitoring activities will not be able to evaluate the effects of land management activities on soil and water resources, document compliance with legal requirements, validate coefficients and assumptions used in the planning process, or respond to public inquiries and appeals." In view of the important values of the watersheds on the LNF (Rock Creek, Bitterroot, Blackfoot, and Clark Fork Rivers), it is imperative that the Plan contain a clear commitment to responsible monitoring. V

FOREST SERVICE RESPONSE CONTINUED

Water Quality

R Management Concern No. 1 was developed at the beginning of the planning process. Subsequently Forestwide Standard Nos. 15 and 28 were developed. These two standards are the basic Forest water quality standards. Standard No. 28 has been modified to clarify the intent of maintaining water quality at existing levels when that level exceeds minimum standards.

Tables II-9 and II-10 (in the RDEIS) projections are based on Lolo stream data collected by several agencies. The projections display water meeting "quality goals," a term developed by the Lolo and applied to water that is "unimpaired from natural conditions."

S The Water Improvement Needs Inventory is approximately 80 percent complete. It is constantly being updated as information becomes available and is used to prioritize watershed restoration projects as rehabilitation funds become available. The Lands System Inventory is 75 percent complete and will be completed by 1987. Both inventories are used for project planning.

T As stated in Forestwide Standard No. 15, the purpose of the Best Management Practices (BMP's) is to maintain State and Federal water quality standards. BMP's are developed at the Regional and Forest levels and will be proven at the project level.

U The statement on page II-5 in the DEIS is incorrect - water and soil constraints were applied to all benchmarks. The benchmarks were developed to establish resource potential and were not intended as alternatives.

Forestwide Standard No. 14 describes how the Forest will protect water quality on lands with intermingled ownership.

V The Forest has made two changes in response to the concern about the adequacy of water monitoring funds. A statement has been added to the Monitoring and Evaluation chapter requiring projects be stopped or delayed when monitoring is required and not funded. Also, Forestwide Standard No. 28 has been modified to reference the Monitoring and Evaluation chapter.

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5. Water Yield.

The data in Table II-8 of the DEIS is confusing and appears contradictory. The narrative states that the average annual maximum water production potential that would not damage stream channels is 3,631,000 acre-feet. Yet, Table II-8 projects water yield values above this safe maximum in all but the first decade. At the same time, the amount of water meeting quality goals is shown to increase throughout the planning period. Fish populations are also projected to decline, which usually indicates decreasing water quality. Perhaps the quality goals need to be re-evaluated. W

In addition, the magnitude of variability in annual water yield is much greater than the LNF's projected average maximum water production. Assuming a normal statistical distribution and normal variability in runoff, annual flows on the LNF already exceed the average annual maximum production potential 45 percent of the time. (Referenced examples: Streamflow characteristics of the Upper Columbia River Basin, Montana through 1979, U.S. Geological Survey, Water-Resources Investigations 81-82, March, 1982, Station 12354500, Clark Fork at St. Regis, Mt. and Station 12340500, Clark Fork above Missoula, Mt.) X

Timing of runoff continues to be a concern of the state. Increased water yield in the spring without additional storage capacity may equate to lower flows during critical parts of late summer. Moreover, uncontrolled increased flow also means increased sedimentation. This has obvious implications for off-forest, downstream irrigators and for stream fisheries. Portraying increased water yield as a benefit of timber management must be clarified in the Plan through a consideration of timing, storage capacity and channel impacts. Y

6. Sedimentation.

In our 1982 comments on the previous draft LNF Plan, we stated that the 63% increase in sediment yields predicted for the preferred alternative was too high. We have found no mention in the current draft of how the LNF plans to address this continued threat to aquatic resources. The Plan is essentially unchanged in this regard.

Sediment yield calculations being used in the LNF Plan could be understated by several orders of magnitude. As stated in our previous comments on the Plan, sediment yield calculations are of little value unless they are generated for individual watersheds. This is confirmed by the USDA Northern Region Guide to Predicting Sediment Yield from Forested Watersheds (October, 1982, p. 3). Z

FOREST SERVICE RESPONSE CONTINUED

Water Yield

W Table II-8 is a maximum production table displaying what is produced when timber, range and water are maximized. It is used to define the limits of supply and is not an alternative. The water yield values, in particular, project what could happen if water production was maximized. The total water yield figure applies to the entire Forest - the FORPLAN model is unable to calculate water yield for individual drainages. Forestwide Standards Nos. 16, 17, 19 and 20 commit the Forest to protecting water quality in drainages where human activities take place. Forestwide Standard No. 19 specifically states that the activities will not produce runoff increases causing stream channel degradation.

X The water yield values in the Lolo Forest Plan and FEIS are used to compare the effects of alternatives. The water yield values are derived from a "water yield model" that uses long-term average annual precipitation as the principal constant and changes in evapotranspiration as a result of timber harvest as the principal variable. Although there is a great deal of natural variability year-to-year, the water yield calculations are not used for absolute projections. Instead, the calculations are used to evaluate the relative effects of different alternatives and activities.

The water yield model will be improved by incorporating streamflow data collected from Forest streams into the model. This effort is just beginning under the water monitoring program. U. S. Geological Survey (USGS) stream flow data is not used to adjust the water yield model. USGS data is based on sixth order and larger watersheds, whereas, the Forest model evaluates the effect of activities in third to fifth order watersheds.

Y It is true that increased water yield from timber harvest can benefit downstream users only if the increased water is available when needed. The increased water yield is not portrayed to be a benefit. There is insufficient storage in the river system to take advantage of the increase, and because it occurs primarily in late spring-early summer, it has the potential to cause sedimentation and downstream channel damage. However, water yield research shows that the increased spring flows do not equate to lower late season flows. Forestwide Standards are designed to prevent the negative consequences that may be associated with increased flows.

Sedimentation

Z The 63 percent sediment increase calculated for riparian areas was an indicator value representing the response of the Forest's entire riparian ecosystem to land management under the preferred alternative. This Forestwide number is no longer used. Sediment yield calculations are only of value when calculated for individual watersheds. When water monitoring or sensitive soils suggest a sediment concern, sediment yield calculations are performed and evaluated during project level planning. A discussion of the effects of land management activities in riparian areas is included in Chapter IV, Section F, of the FEIS.

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Table II-9 projects that sediment increases above the natural baseline amount will average about 80 percent throughout the planning period. It would be helpful to know the current percentage increase over the baseline level, and how much of this increase is attributable to timber harvest and roading on the highly erosive portion of the forest. A map of the highly sensitive soils referred to on p. I-8 would be helpful in evaluating the appropriateness of the management area allocations. AA

The "low to moderate chance that some channels of individual watersheds could have accelerated erosion by increased streamflows resulting from a combination of logging and wetter than normal years" is to be spread across a large number of watersheds (p. II-65 DEIS). The timing and intensity of timber development in individual watersheds should be adjusted to prevent accelerated erosion. Spreading the risk of accelerated erosion "across a larger number of watersheds in stable condition" could result in a larger number of watersheds in unstable condition, and is not a logical justification for timber harvest and roading of unsuitable sites. BB

We concur with the use of the "R-1/R-4 Sediment Model" and the "Guide for Predicting Salmonid Response to Sediment Yields in Idaho Batholith Watersheds" for assessing all forest aquatic resource impacts, with the following qualifications: CC

- The "R-1/R-4 Sediment Model" use of general erosion factors by geologic type (p. 13) appears to be suspect. LNF data indicates that certain "belt series" drainages are as erodable as granitic drainages.
- We feel climatic extremes (especially for above average moisture conditions) should control development activities which will affect water and sediment yields.
- The Plan does not clearly state when, where, or how the sediment or fishery data will be collected to calibrate the yield models.
- We agree with the model's authors that calibrations, specific to the LNF are necessary before the models may be used.

If drainages with high gradient streams are developed, cumulative impacts to low gradient, downstream reaches should be analyzed in the Plan. Low velocity, low energy reaches of high gradient streams may be subject to more deposition than lower gradient streams with identical absolute quantities of sediment. Embeddedness curves for high gradient channels, however, may not reflect fish habitat losses caused by increased sediment yields.

We recommend a conservative approach to sediment prediction models derived from Idaho data. It may be advisable to use low gradient response curves on high gradient streams until better local data is available. The fact that recovery of streams damaged by forest activities is extremely slow underscores the need for good predictive capabilities.

Proposed monitoring of sediment yield appears deficient. The Plan calls for low precision sampling and moderate to low reliability of the samples. We feel long-term sediment yield studies of at least moderate to high precision and reliability, and monitoring of individual drainages that are being disturbed are necessary. Validation of the model should be a high priority. DD

FOREST SERVICE RESPONSE CONTINUED

AA Using comparable model data, the current percentage increase over natural baseline sediment is an average of 21 percent across the Forest. The FORPLAN model that calculates such outputs does not display internal partial calculations. Therefore, total sediment yield cannot be apportioned by soil type and the increase attributable to timber harvest and roading on the Forest's most erodible soils cannot be tracked. In the future this data will be available from the Forest's water monitoring and land system inventory programs.

BB The comment recommends, "the timing and intensity of timber development in individual watersheds should be adjusted to prevent accelerated erosion." In fact, maintenance of water quality and stream stability is required in all Management Areas (MA's) where timber development is planned. Also, Management Area Standards, such as Standard No. 4 in Management Area 16, state, "Timber harvest will not create runoff increases likely to result in channel degradation."

CC Validation of the R-1/R-4 Sediment Yield model has been given high priority. The model is derived from Idaho data and will be calibrated to Lolo Forest conditions to the extent possible. Before using the model for project evaluation, numerical factors will be developed that are specific to the Lolo. Many drainages were developed before 1975 and before there was a formalized monitoring program. The Forest has initiated monitoring on several undeveloped drainages with the purpose of providing baseline information. Once development commences, the same monitoring procedures are continued to determine what changes occur in water quality, the aquatic environment or fish habitat. The monitoring results can be extrapolated to streams with similar hydrologic and biologic characteristics. Developed streams can then be evaluated for changes that may have occured prior to development and monitoring. The data currently available suggest that some developed drainages, such as Schwartz Creek and Lolo Creek, which have measured increases in sediment also have healthy fish populations. When projects occur in drainages where a sediment problem exists, constraints are designed to prevent any net increase in sediment. These project areas also receive priority for project monitoring. Project monitoring design is structured to provide additional feedback for increasing predictive capability on a localized level.

DD The proposed monitoring is designed to sample the range of projects occurring in watersheds of various geologic and hydrologic characteristics that have the potential to alter water quality, the aquatic environment or fish habitat. Based on reasonable budgets and personnel ceilings, monitoring efforts are designed to have a moderate level of precision. Project-level monitoring is not intended to duplicate the intensity of current research efforts. For example, research to determine the fisheries response to sediment is now underway at the Forest Service Intermountain Forest and Range Experiment Station. Project-level monitoring is designed to provide management with the information needed to assess whether the assumptions and predictions of the effects of land mangement activities are accurate. If these assumptions and predictions are not accurate, then Forest Plan Figure V.1, Decision Flow Diagram for Evaluating Variability of Monitored Activities, will be the procedure for modification of actions or the Plan.

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7. Range.

We support the increase in AUMs projected over the planning period.

The Plan's increased emphasis on riparian area management is appropriate. Improvements, including fences and water developments, should be installed where necessary to improve livestock distribution and reduce overgrazing of riparian areas. EE

Prescribed burning of range or wildlife habitat should be carefully planned, implemented and evaluated to insure that project objectives are met: Disturbed sites may require reseeding to prevent weed invasion. FF

The Plan fails to include a comprehensive noxious weed control program necessary to control noxious weeds on the LNF and to prevent their spread to adjacent areas. We support Integrated Pest Management (IPM) techniques as the best combination of chemical, cultural, biological and mechanical weed control methods to help prevent the spread of noxious weeds and help control existing infestations where feasible. The LNF should coordinate their weed control efforts with county weed boards and other appropriate state and federal agencies. GG

The displayed values for range benefits in Table II-39 of the DEIS need explanation. It is unclear how there can be no difference in range benefits among alternatives, when expected livestock use is projected to vary. Range benefits should be a function of expected use levels. HH

8. Timber.

In general, we support the LNF's attempt to maintain the level of timber offerred annually at near current levels. We prefer a sale program that would initially make available an amount of timber that more closely matches the level of harvest on the LNF during the last few years. This would increase the cost efficiency of the Plan, and make achievement of its stated goal more likely. The Plan should have the flexibility to expand timber availability to the proposed level to meet potentially increased market demand. II

The DEIS discussion on p. II-61 (last paragraph) and p. II-62 (1st and 3rd paragraphs) regarding timber harvest is unclear and confusing. These paragraphs need to be rewritten so that they avoid generalizations and emphasize straightforward comparisons. JJ

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FOREST SERVICE RESPONSE CONTINUED

Range

EE During the next 10 years, all Range Allotment Management Plans will be updated. A Range Management Analysis precedes the Range Plan. The analysis evaluates the condition of the range and riparian areas and the plan sets forth the necessary improvements.

FF Prescribed burn plans are prepared and approved before burning any range or wildlife habitat. These plans determine the conditions (e.g., temperature, wind velocity, relative humidity) by which the project objectives can be met. The plans also require a post-burn analysis evaluating whether objectives were met.

GG The Forest is in the process of developing a comprehensive weed control program. Currently, a noxious weed control study is being conducted that will be the basis of future management guidelines and standards. The study will collect information on the occurance of noxious weeds by habitat type and environmental conditions. This information will then be used to develop a model that predicts the risk of weed establishment by habitat type and environmental conditions. The study will also evaluate the impact of various activities on weed establishment. The results of the study will be used to develop management guidelines and standards that will be incorporated into the Forest Plan. The Forest also hopes to contribute to the weed control effort with this study.

The Forest has been participating in weed control efforts for a number of years. The Forest provides research areas and money for a biological control research program conducted by the Montana Agricultural Experiment Station. The Forest cooperates with local counties attempting to control weed invasion onto adjacent private land. Finally, several District resource foresters are members of county weed boards.

HH RDEIS Table II-39 (FEIS Table II-44) has been corrected. As range benefits change amongst the alternatives, so does the expected livestock use.

Timber

II The Allowable Sale Quantity (ASQ) for the decade is the maximum level of timber that can be sold under the Plan. It is normally expressed as an annual average as long as the decade ASQ is not exceeeded. Actual sale levels will depend on a number of factors, including short-term demand and timber sale funding. For example, from 1979 to 1984, the Forest offered about 100 million board feet (MMBF) per year, but only sold about 60 MMBF per year. In response to this demand levels, the 1985 sale program was adjusted to 80 MMFB. The reduction in the volume offered serves as a cost-effective measure for the Forest.

For the past six years the Forest has not sold all the timber it has offered for sale. Under these conditions, unsold volume accumulates. This accumulation allows the Forest the flexibility to adjust to a short-term increase as long as the decade average volume is not exceeded. If market conditions demand volumes beyond the decade average, the Forest would make a more current analysis that might trigger a Forest Plan revision. National Forest Management Act regulations outline the revision process which includes full public involvement.

JJ The timber harvest paragraphs referred to on pp. II-61 and II-62 of the RDEIS have been rewritten.

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There appears to be a large discrepancy between acres planned for harvest during the first decade (11,100), and acres planned for reforestation (4,647) under the preferred alternative (Table II-39 DEIS). This difference should be explained. The acres harvested by silvicultural system shown for the preferred alternative are not consistent between Tables II-30 and II-39 in the DEIS. This should be corrected. KK

The DEIS is also inconsistent in comparing the proposed timber harvest level with the current direction. Pages S-14 and B-62 state that the harvest level for the preferred alternative will increase over current direction. However, Tables II-26 and II-39 show that under the preferred alternative, timber harvests will decrease four million board feet per year. The DEIS should clearly differentiate between volume offered, volume sold, and volume actually cut; and when making comparisons from one year to another, should ensure that like items are being compared. LL

It is unclear why there is such a relatively small difference in the allowable timber harvest between current direction and the preferred alternative, when there is such a large difference between acres clearcut (3,900 acres). This apparent inconsistency should be explained. The difference in harvest under the shelterwood system seems to be in the proper proportion. MM

More information is needed to evaluate the statement on p. IV-24 of the DEIS that: "The most efficient silvicultural treatment to accelerate tree growth in naturally regenerated stands on the LNF is to pre-commercial thin at approximately age 20." Pre-commercial thinning can be very expensive and in some stands the final returns may not justify treatment costs. No mention is made of species, nor of the economic criterion used. It is important that this point be clarified, and that the specific management regime(s) planned for pre-commercial thinning be identified in the Plan. NN

We concur that more intensive management of mountain pine beetle infestations is not justified considering the additional economic and environmental costs. Reforestation with genetically improved stock, as suggested in the Plan, may provide more resistance to insects and diseases and improve the productivity of future timber stands.

We question the concept of including remote areas in the timber base (p. S-13 DEIS). The resource trade-off of investing capital dollars in roads needs to be carefully considered given the marginal nature of much of the timber on the LNF and the importance of these areas for wildlife. OO

It should be stated that the more frequent entries and increased roading associated with uneven age management can have adverse effects on wildlife. PP

FOREST SERVICE RESPONSE CONTINUED

KK The figures displayed in RDEIS Tables II-30 and II-39 (FEIS Tables II-31 and II-44, respectively) have been corrected and are now consistent. During the next decade, approximately 15,300 acres will be harvested annually by clearcut or shelterwood cut and approximately 8,846 acres will be reforested annually. It might appear there is still a discrepancy. However, not all shelterwood cuts require reforestation. Whether reforestation is required will depend on which step of the 3-step shelterwood is being applied. The regeneration step will be applied to 5,100 acres and require reforestation. The preparatory step and overwood step will be applied to 6,400 acres and not require reforestation.

LL Under the preferred alternative, harvest levels will increase over current direction. This is not evident in RDEIS Tables II-26 and II-39 because the data is not correct. The unregulated volume should be 15 MMBF, not 5 MMBF. When the correct unregulated volume is added to the regulated volume (or ASQ), there is an increase in the maximum amount of timber that can offered and sold. The Forest agrees that when comparisons are made the same item should be compared and the item should be clearly defined. The Forest has attemped to be more consistent the FEIS.

MM RDEIS Table II-39 shows a difference in clearcut acres between current direction and the preferred alternative. This difference is correct. The difference in shelterwood acres between the current direction and the preferred alternative is not correct. Under the preferred alternative, the shelterwood acres should be 11,594 acres. The new FEIS Table II-44 shows the correct acres.

NN Precommercial thinning is the most successful method for increasing growth. It can be, and often is, expensive. Although precommercial thinning is an option in all alternatives, it was selected only when increased growth could increase public net benefit. Further discussion of silvicultural methods is included in Chapters II, Section D8, and IV, Section N.

OO The Forest repeatedly measures "resource trade-offs." They are initially evaluated during the planning stage as represented by the RDEIS. At a later date they receive further evaluation during the project development stage. Three quarters of a million roadless acres were reviewed in the RDEIS. Under the preferred alternative, 123,000 roadless acres can be accessed with roads during the next 10 years. To determine which roadless acres should be developed the Forest used FORPLAN, a computer optimization model. This model selects the most cost-efficient means of attaining maximum present net dollar value from Forest management. Forest management is represented by a large number of multiple use outputs and a large number of constraints. For example, in order to achieve increased "output" of elk, the FORPLAN solution required an additional 30,000 acres of winter range. The FORPLAN solution then constrained open roads to approximately 1,800 miles to meet the summer range requirements.

Just because a roadless area has been allocated to the timber base does not mean it will automatically be cut. The original land allocations are planning assignments that need to be "ground truthed." The Forest measures resource trade-offs again during project planning. Forestwide Standard No. 11 requires an economic analysis at three stages of project planning on sales larger than 1 MMBF and on transportation systems for unroaded areas.

PP The frequent entries assosciated with uneven-age management can have an adverse effect on wildlife. However, uneven-age management does not necessarily increase roading. Road design is more a function of topography than the silvicultural system of management.

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9. Economics.

a. Employment.

There is an apparent inconsistency between p. III-9 and Table II-39 of the DEIS regarding employment numbers. Page III-9 refers to 420 jobs while 3,500 jobs are referenced in Table III-39. This needs to be clarified. QQ

Using a single year (1980) as a base for measuring employment and income impacts is misleading. 1980 was not a "typical" year (as any one year is not representative of a larger time span). Any projections or comparisons that are made relating to a base year may result in greatly inflated or deflated figures. It is recommended that a multi-year moving average concept be adopted in place of a single base year. RR

b. Cost Effectiveness.

A stated goal for the preferred alternative (p. B-59) is to manage ..."in a cost effective manner," however, among alternatives the preferred has the:

- 2nd lowest present net value;
- 2nd lowest discounted benefits;
- 2nd lowest returns to the treasury and counties;
- 2nd lowest benefit to cost ratio;
- 2nd highest budget; and
- 2nd highest opportunity costs.

In comparison with others, the preferred alternative appears to be a high cost alternative. In view of the stated goal of cost effectiveness, this choice needs further explanation in the Plan. SS

c. Resource Values.

Recreation values used are derived from nationally developed figures. For some types of use, they are questionable. For example, Table B-3 shows a range of value from $3/RVD for other dispersed recreation to $29/RVD for wildlife viewing. At $21/RVD, the big game hunting value is even lower than for small game hunting value of $24/RVD. This disparity should have been adjusted for western Montana where big game hunting value is much higher than average. This is supported by the estimated expenditure figures used in the I/O model to estimate economic impacts. Big game hunting expenditures ($19.66/RVD) were second only to downhill skiing ($41.24/RVD). Small game hunting and non-hunting wildlife expenditures were less than those estimated for hunters in Colorado 15 years ago, or 10 years prior to the base year of the Plan (1978). Consequently, hunting recreation values are significantly understated. TT

The LNF used a national study published in 1980 to increase the real value of timber over time. Because of the changes in the market since the late 70s, it is questionable whether the price of timber will increase relative to other goods. An analysis of the alternatives with a constant value for timber should be conducted and displayed for the public. UU

Sensitivity analysis work in FORPLAN is perhaps one of the LNF's most important planning activities. We encourage the LNF to do a comprehensive sensitivity analysis to determine which of the factors considered in the model are driving land allocation decisions. VV

FOREST SERVICE RESPONSE CONTINUED

Economics

QQ a.) The 420 jobs referenced on page III-9 apply to Forest Service employment only, whereas the 3,500 jobs in RDEIS Table II-39 (FEIS Table II-44) apply to employment in the five-county market area.

RR The base for measuring employment and income was a multi-year average for 1975-1979.

SS b.) "Cost-effectiveness" refers to the ability of the preferred alternative to best meet the goals and objectives of the Forest while incurring the least cost. Other alternatives may cost less to implement, but they neither meet the Forest goals and objectives nor produce the nontimber outputs associated with the preferred alternative.

TT c.) Recreation values are designed to reflect economic worth of a recreation visitor day to a user at the entrance to the National Forest. This value is quite different from the I/O model coefficient which reflects total expenditures and employment impacts resulting from the user purchasing goods and services on the way to and from the recreation area. Thus, economic value and impact value are two distinct types of analysis. Impact values are based upon the nature of the local Montana economy. Therefore, it is not unusual for these impact values to be different than those found in other areas of the country, such as Colorado.

UU The trend in timber values was based on long-term trends. If recent fluctuations in the timber market are later determined to represent a change in the long-term trend, sensitivity analysis will be done to determine if a Forest Plan revision is necessary. At this time it is not possible to determine if market changes since the late 1970's represent a cyclical fluctuation or a structural change in the timber market.

VV Appendix B, pages B-67 - B-69, discusses the sensitivity analyses used to evaluate constraints. There are a large number of possible or interesting sensitivity runs. The time, personnel and cost requirements limit the number of runs to those which appear to have a significant impact on the solution.

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In Table II-40, a comparison of USFS costs to market and non-market benefits is displayed for the first decade. In all cases except the minimum level, costs exceed market benefits by a substantial margin and for the proposed alternative by more than 2:1. Although the non-market values (for recreation) offset some or all of those additional costs, the near term cost effectiveness of most alternatives is poor. If the timber outputs offered in the future are not purchased (as has been the case), the LNF may be spending money unwisely. WW

There appears to be a major error in Table II-39 of the DEIS. The recreation benefits shown on p. II-85 are annual, rather than for the decade as indicated. The information in the economic analysis should be reviewed to assure that this error has not influenced land allocation decisions proposed in the Plan. XX

10. Wildlife.

a. Habitat.

In the comparison of Alternatives for wildlife beginning on p. II-49 of the DEIS, the assumption that deer habitat is similar to elk habitat is erroneous, as is the further assumption that population trends will be similar between the two species. There has been a tendency to combine mule deer with elk in consideration of habitat treatment and response. If the management emphasis uses elk as the indicator species, broad statements such as 5a on II-49 are inappropriate.

In Appendix B, item C.3 on p. B-43, paragraph 2 contradicts the earlier statement on p. II-49 regarding the similarity of deer and elk habitats. To aid the reader, the LNF should clarify in a brief statement that although the USFS directed that elk would be used as the indicator for forest planning outputs and comparisons, project level determinations made in cooperation with the Montana Department of Fish, Wildlife and Parks (DFWP) will direct actual habitat manipulations and management emphasis for selected species. YY

The discussion on pgs. II-50 and II-51 indicates that the preferred alternative will have the highest net habitat productivity for elk because of habitat management through timber harvest, fire and road closures. Although forage production can be increased by habitat management, the importance of security cover for elk needs to be stressed, especially considering the ever increasing hunting pressure exerted on game populations. Wildlife Management Concern No. 1 (p. I-9) indicates that the LNF doesn't yet have long-range wildlife management objectives and rationale for road closures. This indicates that the relatively simplistic relationship between elk numbers and habitat manipulation described may be premature. ZZ

Using timber harvest to produce "desirable cover/forage ratios for big game," is questionable, as forage is not limiting on summer range; maintaining security habitat is much more important. AAA

FOREST SERVICE RESPONSE CONTINUED

WW The figures displayed in RDEIS Table II-40 represent returns to the U.S. Government's General Fund from market resources and willingness-to-pay values for non-market resources. Most Forest Service budget expenses have already been deducted from the market value figure. Thus, it is not valid to compare market values with budget costs and infer that costs exceed benefits. RDEIS Table II-40 has been deleted in the FEIS, but the components are shown in FEIS Table II-44. The Forest Service will not return money to the General Fund during the next decade. This results primarily from large investments which use appropriated funds to construct new roads.

XX The recreation benefits error in RDEIS Table II-39 (FEIS Table II-44) was a typo mistake and not an error in the analysis. The typo has been corrected. The row heading now reads MM$/year rather than MM$/decade.

Wildlife

YY a.) Elk and deer may not have the same response to management activities. As you have indicated, elk were used only as an indicator of population trend. The assumption that elk and deer would respond similarly was based on the premise that land allocated to big game would be managed for the appropriate species in cooperation with The Department of Fish, Wildlife and Parks. In other words, "whitetail winter ranges" would be managed to optimize whitetail deer, and "elk only" winter ranges would be managed to optimize elk. It is under this premise that elk and deer produce a comparable response within each alternative.

ZZ Security is an integral part of elk habitat. References to security can be found in monitoring items 1-1 and 1-2, Forest Plan Management Areas 18, 19, 22, 23 and 26, and Forestwide Standards Nos. 21, 23, 26 and 52. Wildlife Management Concern #1 was a significant problem when the planning process began in 1978. At that time it was understood that there was some relationship among elk productivity, hunting recreation opportunities and open road density. Road management was done on a project-by-project basis with no Forestwide goals. As a result of the planning process, the road management for big game now involves the following steps: first, Forestwide Standard No. 52 in the Forest Plan identifies big game and hunting recreation as a primary benefit of road management; second, based on the Jack Lyon road/elk model, a maximum open road mileage of 1,833 was established for the Forest (this equates to approximately 1.1 miles of open road per section on roaded lands and approximately .57 miles of open road per section on all Forest lands, including wilderness and roadless lands); finally, as a tool for distributing open road miles, the Forest was divided into high, medium and low quality elk habitat (Department of Fish, Wildlife and Park personnel assisted in this step). In the Travel Plan, all new roads in high quality habitat will be closed, and existing roads will be closed to a density of 1.1 miles/section. New roads in moderate quality elk habitat will be closed to a density of 1.1 miles/section although existing roads currently open will generally remain open. These steps are outlined in the Travel Plan Data Base.

AAA There is a need for security cover on summer range. Maintaining cover during project level design and managing roads through the Travel Plan process are the tools used to maintain security cover.

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Wildlife habitat improvements discussed in the Plan include only spring burning to improve forage quality and quantity on winter ranges. Security habitat should also be discussed, particularly from the standpoint of maintaining remaining roadless security areas. This qualifies as maintaining or improving wildlife habitat equally as much as direct habitat manipulation projects. BBB

In certain cases, wildfires should be allowed to burn if the location of the fire is such that habitat improvement for big game (winter range, etc.) will result. CCC

In many areas of elk winter range and bighorn sheep range along the Clark Fork and Thompson River, more than "cool spring burns" are needed to rejuvenate or create shrubfields. Significant acreages of shrubfields created by wildfires in the early 1900s are being lost to coniferous encroachment, with many of the more productive sites already supporting young stands of timber. DDD

Under the proposed Alternative D, the LNF would increase grazing for domestic livestock to values exceeded only in the Maximum Net Value alternative, while at the same time maximizing potential for elk. The statement on the bottom of p. II-59 that "increased emphasis on elk winter range management to relieve the necessity to reserve forage in allotments for elk use" is not logical. It is unrealistic to assume that enhancement of winter range will offset or negate needs on other seasonal ranges. Some now think that enhancement of other seasonal ranges may contribute more to big game nutrition and productivity during the winter than the actual winter range condition. Even so, providing adequate forage during all seasons and in all areas used by elk is necessary. EEE

The recommendations of the Montana Cooperative Elk-Logging Study and the Montana Fish and Game Commission's road management policy should be incorporated in the Plan. A commitment in the Plan to apply these recommendations on all management areas by the LNF in the Plan is necessary to reduce the impacts of roads and timber management activity on elk and other big game and to provide quality hunting opportunities. FFF

The Plan emphasizes the negative aspects of managing roadless areas. The benefits from this type of management to big game security habitat, hunter opportunity and hunting season length and type need to be recognized to provide a more balanced discussion. GGG

b. Grizzly Bear.

Legal or illegal shooting of bears is perceived by the public to be the reason for the declining grizzly bear population. The Plan furthers this perception by stating that: "The principal factor responsible for this decline (drastic declines in grizzly bear populations) has been the deliberate or indiscriminate shooting of bears." It is extremely misleading for the LNF to support this philosophy. The loss of historical habitat and degradation of existing habitat has been far more damaging to the bears' situation than direct mortality by man. HHH

FOREST SERVICE RESPONSE CONTINUED

BBB Under the National Forest Budget Accounting System, only road management and winter range vegetative treatment qualify as habitat improvement. Leaving summer range drainages unroaded also benefits security. However, the latter involves the deferral of road entry and timber harvest and is accounted for as wildlife "coordination," not habitat improvement.

CCC Fire management programs determine when and where fires are allowed to burn. These programs are becoming more prominent as more knowledge is gained about ecological principals and economic reality. The decision to let a fire burn will be based on a number of factors, including benefits or adverse impacts on wildlife.

DDD The vegetative condition of winter ranges and corresponding wildlife objectives dictate whether a spring or fall burn is needed. For instance, where ceanothus is desired or heavy fuels are encountered, fall burning may be required.

EEE The statement regarding enhanced winter forage contains no intent to reduce available forage during other seasons. Rather, the intent was to reduce conflicts between elk and cattle on winter range by producing more forage through vegetative manipulation. It is recognized that increased winter forage does not, by itself, increase elk populations. The Plan emphasizes winter forage, thermal cover, critical summer range, security, road densities and so forth. When livestock and big game conflicts develop, big game forage needs will receive top priority as required by Forestwide Standard No. 4.

FFF As indicated in Forestwide Standard No. 23, the elk logging study results will be considered on all projects where elk are of concern. In most situations, road management will exceed the State's recommended open road density. On highly productive summer range, the maximum open road density will be about 1.1 miles of open road per square mile. A brief discussion of this road management strategy has been added to FEIS Chapter IV, Section E.

GGG The roadless benefits to hunting recreation are discussed in "Analysis of Impacts of Forest Plan Allocations on MDFWP Hunting Districts." This analysis is available upon request.

HHH b.) The statement on the reasons for drastic declines in grizzly bear populations has been changed to read "...the principal factors for this decline have been deliberate shooting and habitat degradation resulting from urbanization/subdivision, agricultural uses, road building and logging."

The discussion of "augmentation" in the Plan without reference to habitat maintenance and enhancement (quality and quantity) is meaningless. Augmentation may have merit after it can be established that suitable habitat exists. This is especially true in areas that are disjunct from the occupied areas and are less likely to be available to bears dispersing from core habitats. III

We are concerned that the LNF appears to be under the assumption that recovery and intensive management of habitat for grizzly bears are synonomous. Just as essential habitat is well protected by wilderness and backcountry management emphasis, the habitat subjected to intensive management must likewise be well protected. This continues to be a major concern in areas of timber and roading activity. now occupied by grizzly bear and other big game species. It seems very unlikely that Alternative C, the high commodity emphasis with minimum acres allocated for grizzly bear, could result in a recovered population under any time frame, especially in the Cabinet-Yaak Ecosystem. JJJ

The Plan states that habitat quality in MS-2 areas is not a factor in grizzly bear recovery. MS-2 areas may contain some grizzly bear habitat components and support occasional use, in which case the Endangered Species Act specifies that such habitat quality cannot be jeopardized. Further, the MS-2 areas could be valued as travel corridors in which security rather than forage is a primary concern. KKK

c. Hunting Districts.

The "Analysis of Impacts of Forest Plan Allocations on Montana Department of Fish, Wildlife and Parks Hunting Districts" should be included in the Plan. We suggest the following changes be made: LLL

- o Minimum percent cover must be defined.
- o Average Open Road Density should be changed to Maximum Acreage Open Road Density.
- o It should be stated that both of the above are the minimums and maximums only for LNF lands in the hunting districts.
- o A statement of when these conditions and situations will exist is needed.

d. Monitoring.

We suggest the following revisions in wildlife-related Monitoring Items to assure a valid monitoring program on the LNF:

- o Under Monitoring Item 1-1, "Elk productivity - total human disturbance..." the "Variability (±) Which Would Initiate Further Evaluation" should include a statement that when the bull elk harvest in any hunting district consistently exceeds 40% during the first week of the hunting season, additional road closures will be implemented. MMM

III The term "augmentation" is used to familarize the public with some of the management tools available. The major strategies to achieve grizzly bear population recovery are bear protection and habitat maintenance or enhancement. The strategies are briefly outlined in Chapter II, Section D5c in the FEIS.

JJJ Table II-22, which originally showed Alternative c as having few acres managed for the grizzly bear, was incorrect. The table has been corrected and is found in FEIS Chapter II, Section D5c. Alternative c is roughly comparable to the preferred alternative in terms of the grizzly bear. Both alternatives have a large number of acres designated essential to the grizzly bear and intensively managed for the grizzly bear.

KKK In some cases habitat factors are critical to bears in MS 2. The Forest gives all occupied habitat (MS 1, 2 & 3) the same level of project analysis. Biological evaluations are done to identify possible conflicts with the bear, and to identify constraints needed to avoid those conflicts. Since MS 2 is not, by definition, essential to the bear's recovery, most of the constraints involve individual bear protection and not habitat enhancement. However, as pointed out, the best way to protect individual grizzly bears is by providing adequate amounts of security and cover, and by avoiding potential mortality factors such as human disturbance during bear use periods.

LLL (c.) The "Analysis of Impacts of Forest Plan Allocation on Montana Department of Fish, Wildlife and Parks Hunting Districts" is available on request. The Forest has made the following changes in the Hunting District analysis: 1) minimum percent cover is defined; 2) average open road density has been changed to maximum average open road density; 3) it is stated that 1 and 2 apply only to hunting districts on the Lolo National Forest; 4) the conditions under which 1 and 2 exist have been defined.

MMM (d.) (Monitoring Item 1-1) Bull elk harvest rates have not been added to the "variability requiring further evaluation" section. Instead, bull elk harvest rates have been added to the "data source" section of monitoring items 1-1 and 1-2.

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- o Add Monitoring Item 1-7, "Hunter Trends and Season;" Data Source - MDFWP Hunter Survey; Frequency - Annuals Variability - Any change in season length, ±10% change in hunter numbers. NNN

- o Add Monitoring Item 1-8, "Habitat Effectiveness by Management Area;" Data Source - Travel Plan, TSMRS; Frequency - Annual; Variability - any deviation from management area Standards and Guidelines. OOO

- o Add Monitoring Item 1-9, "Elk Population;" Data Source - MDFWP Trend Counties; Frequency - Annual; Variability - ±5% in three-year running mean. PPP

- o Under Monitoring Item 7-1, "Miles of road open to public use," the "Variability (±) Which Would Initiate Further Evaluation" should be changed to "Greater than 5% annually." QQQ

e. Forest Goals.

We suggest the addition of the following to the Long-Range Forest Goals: "For threatened and endangered species occurring on the forest, including the grizzly bear, gray wolf, peregrine falcon, and bald eagle, manage to recover each species to non-threatened status." RRR

f. Forest Policies.

We suggest the following addition to the Forest Policies under the heading of Recreation: "Provide a variety of hunting recreation opportunities by using project planning and road management to assist the DFWP in meeting their goal of maintaining long hunting seasons with minimum restrictions." SSS

Policy #4 (p. 2, Plan). We suggest that this policy address the objective of attempting to provide "Quality" hunting and fishing by means of habitat maintenance, transportation management and planning and by coordinating and cooperating with the DFWP to provide for a wide diversity of hunting and fishing opportunities. TTT

Policy #15 (p. 4, Plan), item d - "Fisheries Production" should include the following addition: "Water quality monitoring on Rock Creek will be carried out under the agreement "Project Work Aquatic Resource Monitoring Procedures, Rock Creek Drainage" dated May 31, 1973. UUU

Policy #23 (p. 6, Plan) should be rewritten as follows: "It is our intent to provide public access to forest lands. However, roads will be closed where adverse resource impact and/or the maintenance cost of leaving them open exceeds the benefits. Adverse impacts include: increased maintenance costs, jeopardized big game production and protection, decreased hunting and fishing opportunities, and stream sedimentation. Closures of collector roads will be made to avoid adverse impacts to the resource. Most spur roads will be closed after special resource needs are satisfied." VVV

FOREST SERVICE RESPONSE CONTINUED

NNN (Monitoring Item 1-7) The recommended item has not been added. Monitoring items I-1 and I-2 are both designed to monitor the hunting recreation and elk productivity issue. "Hunting season length" has been added to the data source for both monitoring items.

OOO (Monitoring Item 1-8) The suggested monitoring process would be an excellent tool in making project level decisions. Because the elk analysis model evolved without the current information base, this will take some time to apply. When summer range elk outputs are recalculated, they will be based on: 1) designation of permanent herd units; 2) analysis of cover and open road densities based on the latest research information, and 3) determination of habitat effectiveness. All three items can be used as a project management goal/constraint, and as a point from which to monitor success. In the interim, the "Analysis of Forest Plan Allocations on Montana Department of Fish, Wildlife and Parks Hunting Districts" will be used as a guide in project level activities.

PPP (Monitoring Item 1-9) The monitoring item has not been added. Monitoring items 1-1 and 1-2 are both designed to monitor the hunting recreation and elk productivity issue; "elk population" has been added to the data source for both monitoring items.

QQQ (Monitoring Item 7-1) The variability category has been changed to 20% annually and 10% of the 5-year average projected in the Forest Plan.

RRR e.) Forestwide Goal No. 7 has been changed as recommended.

SSS f.) Forestwide Standard No. 26 has been added in response to the recommendation.

TTT (Policy #4) This suggestion is now reflected in Forestwide Standard No. 8.

UUU (Policy #15) Forest Policy #15 has been incorporated into the "Rock Creek" chapter of the Forest Plan. Under the chapter's Monitoring and Evaluation section, the following statement is included: "In keeping with the intent of the Rock Creek Agreement of 1973, all projects capable of having a significant adverse impact on water quality and fisheries habitat will be monitored and the data thoroughly analyzed." The specific monitoring parameters are listed in Chapter IV, Section D. The parameters have been updated to encompass the ones most likely affected by management activities.

VVV (Policy #23) The recommended statements are addressed in Forestwide Standard Nos. 26 and 52 in the Plan. Standard No. 26 provides for a variety of hunting recreation opportunities by using project planning and road management to assist the MDFWP in meeting their goal of maintaining long hunting seasons with minimum restrictions. Standard No. 52 states, in part, that primary benefits to be considered for road closures are: "optimizing big game production, providing a variety of hunting recreation experiences..."

We also recommend the following addition to policy #23(b): "Road closures may be used to maintain hunting opportunities and to pressure viable habitat, as well as to distribute big game harvest and provide for liberal, lengthy recreational hunting opportunities. The Montana Fish and Game Commission Road Management Policy of October 13, 1982, will be implemented." VVV

g. Forest Standards and Guidelines.

We suggest replacing Forest Guideline #13 (p. 101 Plan) with the following Forest Standard: "Management practices in essential habitat of threatened and endangered species must be compatible with habitat needs of the species (grizzly bear, gray wolf, bald eagle, and peragrine falcon) consistent with the goal of recovery to non-threatened status. There are no other known plant or animal species on the LNF that have been identified as threatened or endangered under provisions of the Endangered Species Act of 1973. If and when such habitats are identified, appropriate measures, pursuant to Section 7 of the Endangered Species Act, will be taken to protect the species and its habitat consistent with National Goals for species recovery to non-threatened status." WWW

h. Land Allocations.

The DFWP has provided specific comments regarding recommended changes in land management emphasis in selected areas to reduce adverse impacts to wildlife on the LNF. These recommendations are included in their entirety as Appendix A to these comments.

i. Lands.

The acquisition or maintenance of key wildlife habitat in public ownership should be a high priority in all land exchanges or sales. XXX

11. Rock Creek.

The goals and mutually agreed upon objectives of the Rock Creek Committee agreements should be included in the LNF Plan. Both the Deer Lodge National Forest and LNF entered into forest management agreements with a congressionally recognized resource committee, the Rock Creek Committee, in the 1970's. The efforts of all the people on the committee were worthy and the results stand as the basic guidelines for the Rock Creek drainage. We recommend that the monitoring program adopted by the Rock Creek Committee be implemented by the LNF as agreed upon, and that consideration be given to creating an interagency and private task force to redesign the monitoring methods to reflect current state-of-the-art techniques. YYY

The limitations of the R-1/R-4 Sediment Model should be evaluated in terms of applicability to the Rock Creek area. Using results from the model to project threshold limits for design purposes could be a serious mistake because of the cumulative assumptions needed (used) in the modelling process. ZZZ

FOREST SERVICE RESPONSE CONTINUED

WWW (g.) Forestwide Standard No. 27 reflects this suggestion.

XXX (i.) Acquisition of key wildlife habitat is an objective of the Forest land adjustment plan.

Rock Creek

YYY Chapter IV, Rock Creek, has been added to both the Deerlodge and Lolo Forest Plans. This chapter contains the goals and objectives of the Rock Creek committee agreements. The monitoring program has been redesigned to reflect current state-of-the-art techniques. The redesign is the result of informal discussions with previous members of the Rock Creek committee and fully reflects the intent of past agreements.

ZZZ While the R-1/R-4 Sediment Model was applied to Deerlodge sub-watersheds in Rock Creek, it was not applied to Lolo sub-watersheds or Rock Creek as a whole. The model was not appropriate for the Lolo portion of Rock Creek because very little granitic parent material is present. Instead, the much less erosive belts form most of the parent structure. To apply the model to the entire drainage would have misrepresented Rock Creek. Because the granitic sub-drainages on the Deerlodge were below predicted thresholds, the less erosive Lolo sub-drainages would have diluted and hidden the effects from the granitic sub-drainages.

The Forest is not relying solely on predictive models. Monitoring will be completed on all projects with potential risk to Rock Creek.

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12. Fisheries.

The Plan used the "Guideline to Salmonid Response to Sediment Yields Model" in developing fish population outputs. The guideline emphasizes the need for site specific calibration data before application of the model. Since calibration data has not been developed on the LNF, fishery outputs of the Plan are questionable. This is a serious concern in view of the proposed large increase in the activities known to adversely impact fishery resources (i.e., opening more 40% and greater slopes to tractor skidding practices, significantly increasing road mileage, and water yield increases exceeding 8% in some dranages). In addition, the proposed monitoring budget appears inadequate to validate model assumptions. **AAAA**

The Plan is not clear as to how fish habitat will be maintained or improved, what levels of funding will be available, and who will be responsible for implementation. We are particularly interested in reviewing this information. It appears that the Plan is offering to mitigate degraded water quality by improving the physical habitat. Unfortunately, improvements in physical habitat alone cannot improve a fishery when water quality is limiting. Preventing habitat deterioration is the most efficient and least costly means of maintaining stream fisheries. **BBBB**

It is unclear in Table II-4 of the DEIS why both sediment production and fish populations would decline under minimum level mangement. One would expect fish populations to increase or at least remain stable with improving water quality. The monitoring program necessary to evaluate the effectiveness of sediment mitigation measures is not included in the Plan, making it difficult to determine whether the fisheries' goals can be met. **CCCC**

The Plan fails to acknowledge that some streams, such as Lolo Creek, are already at or near degradation thresholds. Monture Creek, which was chosen as a control site for sediment studies, has greater sediment problems than some developed sites. An alternate site should serve as the control. **DDDD**

Fisheries

AAAA The "Guideline to Salmonid Response to Sediment Yields Models" was not used in developing fish population outputs. Prior to 1984, fish outputs relied heavily on population data from Rock Creek and population estimates from the Department of Fish, Wildlife and Parks. The estimates proved to be low and have been increased, based on analysis of more recent MDFWP data. In response to the concern about the monitoring budget, direction in Chapter V, Section D, of the Forest Plan reads: "If monitoring can not be accomplished in accordance with this plan, management activities will be redesigned, rescheduled or dropped and an amendment will be issued."

BBBB Maintenance of habitat involves both the maintenance of water quality satisfactory to the needs of the existing cold water fishery, and the physical habitat components such as pool quantity and quality or cover, judged to be essential to existing cold water fish populations. Improvement of habitat can include both the reduction of sediment delivery to a stream and the restoration of physical habitat components, such as pool availability, vegetation for cover and streambank stability. The plan does not propose to mitigate deteriorated water quality with improvement of the physical habitat. Habitat restoration will be limited to those specific sites where past actions have resulted in degraded habitat. Maintaining water quality at a level satisfactory to a cold water fishery is a Forestwide objective. It is agreed that preventing habitat deterioration is the most efficient means of protecting fisheries.

CCCC Table II-4 reflects outputs under the Minimum Level Benchmark, which includes a decreasing level of road and trail maintenance. Although this is perceived as having a negative effect on fish populations by allowing temporary increases in stream sedimentation, the analysis did not quantify fish population changes resulting from sediment production. However, the Forest does recognize that alternatives with high intensities of management would likely affect fisheries to a greater extent than alternatives with lesser intensities (see discussions in D-6, Chapter II, and F, Chapter IV). The lower quantity of fish habitat improvement and the continued grazing conflicts (first decade) due to low investment result in lower projections for fish populations in this benchmark than in alternatives where investments in both fish habitat improvement and range, such as protective fencing, is planned.

DDDD As noted earlier, the Lolo Plan was being developed while site specific water quality data was being gathered. After collecting and analyzing data from Monture Creek for three years, the Forest determined that the natural variability of this drainage was too great to serve as a control station for a glaciated belt series geology drainage. Therefore, data which had been gathered in West Fork Gold Creek was substituted for the Monture Creek data. Monitoring in Lolo Creek detected a downward trend in water quality and aquatic habitat indicators. As a result of this monitoring feedback, the Forest Management Team established the following requirement for projects proposed in Lolo Creek: no project can be implemented unless it produces a calculated net decrease in sediment yield.

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Cumulative effects of management on streams that lie outside the LNF boundary appear to have been ignored. The Plan needs to address this responsibility. EEEE

13. Visual.

It is difficult to compare visual quality objectives among alternatives based on the information given. The percent of inventoried visually sensitive areas maintained is not a useful nor meaningful measure. It would be preferable if the acres of suitable timber allocated to each visual quality class were shown. This would enable both a better comparison among alternatives, and an opportunity to analyze the impacts of the proposed visual quality objectives on timber harvest levels. FFFF

14. Fire.

The range of annual suppression costs shown on p. IV-19 should be checked. A range from $1,000 to $2,000,000 is shown. The $1,000 value appears to be exceedingly low. GGGG

The Montana Airshed Group and Cooperative Smoke Management Plan ahould be referenced on pp. II-71 and III-36 of the DEIS. HHHH

EEEE Just as one resource activity affects another resource activity, so do on-Forest activites have effects off-Forest. However, it is difficult to determine the off-Forest effects because private and other agency activities also contribute to these effects. The Forest will continue to encourage data collection off-Forest and work with the other agencies and adjacent landowners to maintain water quality. The Division of Forestry, Department of State Lands; the Water Quality Bureau, Department of Health and Environmental Sciences, and the Department of Fish, Wildlife and Parks are the State agencies responsible for data collection and evaluation of waters downstream from the Lolo National Forest. Off-Forest analysis is dependent on a strong data base related to private land activities and off-Forest stream conditions. Where downstream data is available, the impact of management activities on the off-Forest aquatic environment will be evaluated at the project level, as required by Forestwide Standard No. 28.

Visual

FFFF To improve the comparison of Visual Quality Objectives amongst alternatives, Table II-16 now displays acres of "inventoried visually sensitive areas maintained" instead of percent.

Fire

GGGG The range of annual suppression costs shown on RDEIS page IV-19 (FEIS page IV-24) is incorrect. The sentence under question should read: "During this period, suppression costs ranged from approximately $100,500 to more than $2,000,000 a year."

HHHH RDEIS pages II-71, III-36 and others state that coordination will be made with State and local fire organizations for the purpose of managing smoke relative to air quality conditions. The specific group and plan under which the coordination takes place have been added and can now be found in Chapter II, Section D12, and in Chapter III, Section B15.

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APPENDIX A

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS COMMENTS ON

THE LOLO NATIONAL FOREST LAND ALLOCATION UNDER ALTERNATIVE D, THE PROPOSED ACTION

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Land Allocations under Alternative d - Proposed Action.

We request the following land management emphasis allocations be changed:

GENERAL AREA	LOCATION	MANAGEMENT EMPHASIS FROM	MANAGEMENT EMPHASIS TO
E. of Seeley Lake	S16, 18, 20, 28, 30, 6, 8, T17N, R14W	A	C
	S9, 10, 14, 15, T16N, R14W	A	C

Justification - This area is an important elk migration corridor to the Clearwater Lake-Morrell areas. Because of the intermingled private and public lands and because timber harvest is being maximized on the private lands, it is important that the public lands in this area be managed with respect to this important migration corridor.

GENERAL AREA	LOCATION	MANAGEMENT EMPHASIS FROM	MANAGEMENT EMPHASIS TO
Lodgepole-Dunham Cr	S13, 14, 15, T17N, R13W	A	F
	S23, 24, 25, 35, 36, T17N, R13W	A	C

Justification - both areas represent important elk summer-fall range for elk that winter on the state's Blackfoot-Clearwater Wildlife Management Area. This is based on radio collar relocations of elk from the wildlife management area.

Grizzly Bear Mgt. Situation 2 Line - The boundary should extend down to the forest boundary in the SW corner of Sec. 3, T16N, R14W and proceed easterly

Land Allocation Replies:

E. of Seeley Lake

Based on recent data collected by Department of Fish, Wildlife and Parks, the Forest recognizes the importance of this area as an elk migration route. Reallocating the area to critical elk summer range or other wildlife emphasis area is not a feasible alternative. The area is under checkerboard ownership and already heavily roaded. Significant investments have been made to manage timber on both National Forest and private lands. Road Cost-Share agreements commit the Lolo to certain levels of existing access. The elk migration factors are composed of minimizing access and retaining adequate amounts of cover. Since existing clearcuts are well stocked and providing hiding cover, consideration for elk migration can be made through careful management of timber harvest design and seasonal road access to provide forage and cover.

Lodgepole Dunham Cr.

These areas are important elk summer range. The data base indicates that there are large inclusions of wet, gentle, mid to high elevation lands in the area that fit the criteria for critical summer elk range. When such areas represent less than 50% of designated land units, as is the case here, the areas are not shown on the map as Management Emphasis c. However, these sensitive areas will be managed as Management Emphasis c when encountered on the ground. The concept of managing such areas as sensitive inclusions is covered in the Forest Plan under Management Area 26. The concept is also applied in Management Area Standards, such as Standard 6 of Management Area 16. Roadless designation (Management Emphasis f) was not considered for the area. The Seeley Lake District is currently in the process of testing timber sale suitability in the Dunham Creek drainage.

Grizzly Bear Mgt. Situation 2 Line

The location of the MS 2 line is somewhat arbitrary in this particular area since there is little data to support the assumption that "occasional use" by the grizzly bear is occurring. As grizzly bear research and grizzly bear habitat inventory is available, this boundary will be revised. Forest Standard No. 24 (originally Forest Policy 13) was designed to provide protection for the grizzly bear in MS 2, although the wording requires protection anywhere on the Forest. Thus, protection will occur regardless of the actual designation of MS 2.

WM-G16
page 23

along the forest boundary to where it meets the present line in the SW corner of S24, T16N, R13W.

Grizzly Bear Mgt. Situation 1 line - The boundary should extend down Monture Creek to the NE corner of Sec. 19, T16N, R12W, thence westerly along section line to the NW corner of that section, thence south along section line to where it meets the present situation 2 line, thence easterly along said line to the SE corner of Section 28, T16N, R12W, thence northerly along section line to the original situation 1 line.

Monture-Dunham Cr.   S32, 28, 29, 21, T16N, R12W   A   B

Justification - the extension of the situation 1 line encompasses essential spring grizzly bear range. This is based upon reported sightings.

Little-Shanley   S2, 3, 4, 5, 8, 9, 10, 11, 14, 15, 16
Cave Cr.   17, T16N, R13W   A   C

Justification - Provides important summer/fall range and migration corridor to the Young Cr. drainage in the Bob Marshall.

Ovando Mtn.   S4, T15N, R11W and S32, 33, 34, T16N, R11W   A   C

Justification - This area is an integral part of the FWP Ovando Mtn. winter range and also provides an important fall security area for elk, mule deer and black bear.

Burnt Mtn.-Mormon   SW¼ and N. 2/3 S27, S. portion & N½   A   C
Spr.-East Hill Area   S28, and all S34, 35, T11N, R16W   Alt. d-proposed
action map desig.
OR   m   1
Corrected Rock Cr
map designation

FOREST SERVICE RESPONSE CONTINUED

Grizzly Bear Mgt. Situation 1 Line

The recommended MS boundary change has not been made. Grizzly bear habitat designations are very dynamic and are constantly being revised as new information is collected. The Monture Creek area does have some suitable spring/fall bear foods, but the feeding areas are very close to a private cattle operation. Encouraging bear use in this area could actually be detrimental to the bear by exposure to mortality factors. There is no known documented grizzly bear use in the area.

Monture-Dunham Cr.

The habitat inventory does not support the occurrence of desirable bear foods in the area. Also, there is no evidence of recent documented grizzly bear activity in the area.

Little-Shanley-Cave Cr.

The area is prime elk summer range. The data on timber age classes, habitat types and clearcut restocking indicate that a high level of cover and a minimum of open road density will exist in the area for the forseeable future. Thus the current mix of allocations appears adequate to maintain the migration/summer range values in the area.

Ovando Mtn.

The value of this winter range is recognized. Adjacent National Forest, however, is summer range. Lands suitable for timber production comprise a rather narrow strip between the winter range and the Scapegoat Wilderness. Based on high amounts of cover in the area, a rather conservative timber harvest entry schedule in the area and the presence of the large amount of wilderness area in the vicinity, the total elk habitat will be protected.

Burnt Mtn.-Mormon Spr.-East Hill Area

Some designated non-winter range lands in Sec. 27 do "winter" animals in mild winters or in early spring. The Forest assumptions, however, indicate that desired big game targets can be met with the current allocation mix. The portion of Sec. 28 recommended for "wildlife emphasis" meets none of the criteria for critical wildlife habitat. It is a north slope with no winter forage or thermal cover potential. The steep, well-drained nature of the area does not meet the criteria for critical elk summer range. The security values can be maintained with the current timber emphasis. Sec. 34 is already allocated to winter range, as is Sec. 35.

wm. 6-16
page 24

Justification - This area is an important, integral part of an elk, deer and bighorn sheep fall, winter and spring range. The timbered portions contain shrub production areas and old growth which provide for security, thermal cover and snow interception adjacent to open bunchgrass slopes.

Stony Peak Area — Area south and west of the proposed Quigg Pk. wilderness and Rock Cr. and between Alder Cr and the Deerlodge Forest boundary

F H
Alt. d-proposed
action map desig.
OR
c h
Corrected Rock Cr
map designation

Justification - This area and adjacent areas on the Bitterroot and Deerlodge National Forests should remain roadless. However, based upon past experience the only way to insure an area remains roadless is to give it wilderness status. The Governor endorses wilderness designation for this area.

Tyler Cr. Area — S34, T11N, R15W & S3, 4, 9, SE¼, S5, E½, S8, T10N, R15W

A C
Alt. d-proposed
action map desig.
OR
m j
Corrected Rock Cr
map designation

Justification - This area represents an important elk summer/fall range and important moose range. It contains numerous wet meadows with adjacent security areas.

Packer Creek — S23, 24, 25, 26, 27, T20N, R31W

A F

FOREST SERVICE RESPONSE CONTINUED

Stony Peak Area

The area contains important big game values. The Forest assumptions indicate similar wildlife values between roadless (MA 11) and wilderness (MA 12) assignments. The area is assigned to MA 11, which is primitive, nonmotorized recreation. Wilderness classification is discussed in the wilderness section of this letter.

Tyler Creek Area and Packer Creek

The areas do contain a number of critical wet sites which are extremely important for moose, elk and a number of nongame wildlife species. These areas will be treated as inclusions of Management Area 26 (critical summer elk habitat) and managed for wildlife values utilizing timber harvest as a very limited and restricted management tool. This is covered in the Forest Plan under MA 26.

wm-G-16
page 25

S30, 31, 33, 35, 36, T20N, R30W A F

Justification - Important security areas for elk, mule deer and black bear.

Tamarack Creek S4, 9, 10, 11, 12, 13, 14, T10N, R28W A C

Justification - Important security areas for elk, mule deer and black bear.

Big Creek S2, 3, 10, 11, 23 A C

Justification - Important security areas for elk, mule deer and black bear.

Little Joe S2, 3, 11, T16N, R29W A C

Justification - Important security areas for elk, mule deer and black bear.

Cache Creek in S13, 14, 15, 17, 19, 20, 21, 22, 23,
Hoodoo W.S.A. 24, 25, 26, 27, 28, 29, T12N, R25W F H

Justification - Important security areas for elk, mule deer and black bear. High wilderness values.

Bend S26, T27N, R27W A C

Justification - This is an important winter range area.

SE of Thompson Falls
Cherry Ck. Bottom From the Clark Fork confluence upstream to the junction of Lynx Ck. A C

Justification - This is white-tailed deer winter range.

Clark Mtn. S19, 29, 30, 32, 33, and 34, T49N, R29W A C

Justification - This is elk winter range.

VI-118

FOREST SERVICE RESPONSE CONTINUED

Tamarack Creek
Big Creek
Little Joe

Big game security is a significant concern in this area. The Forest assumptions indicate that careful timber harvest timing, design and post-sale road management will maintain security habitat.

Cache Creek - Great Burn

This area has been designated wilderness.

Bend
Cherry Cr. Bottom
Clark Mtn.
Mosquito Cr
Prospect Cr Burn
North & South Forks of Wilkes Cr

A portion of these areas is winter range. The Forest data base indicates that the desired wildlife targets can be met with the current amount of winter range acres.

wum · G -16
page 26

Mosquito Ck. S29, T22N, R30W A C

Justification - The areas shown as management emphasis C should be extended to include this area.

Prospect Ck. Burn Head of Brush gulch A C

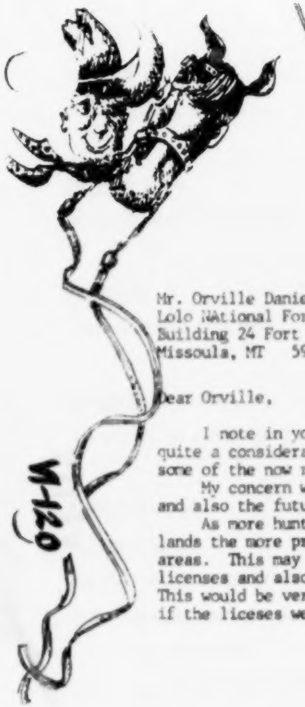
Justification - This area is critical elk summer range similar to the adjacent Therriault Gulch.

North and South Forks of Wilker Ck. S13-26, T20N, R31W, S19, T20N, R30W A C

Justification - Important elk summer range.

VI-119

WM-I-1



WHITE TAIL RANCH
OVANDO, MONTANA
ZIP CODE 59854

AREA CODE 406
Phone 793-5666

February 28, 1985

MAR - 4 1985
RECEIVED

Mr. Orville Daniels
Lolo NAtional Forest
Building 24 Fort Missoula.
Missoula, MT 59801

Dear Orville,

I note in your Forest Service Plan that you are considering quite a considerable amount of road building and logging activity into some of the now roadless areas.

My concern would be for the welfare of the wildlife in these areas and also the future of hunting opportunities.

As more huntable areas are eliminated from our National Forest lands the more pressure is being exerted on our shrinking wilderness areas. This may throw us closer to a permitted system with our hunting licenses and also with the public in the use of the wilderness. This would be very determental to the outfitting industry fo the state if the liceses were on a drawing. A

Thankyou for your consideration,

Jack Hooker
Jack Hooker /KH

OF
• CABINS • PACK TRIPS • BIG GAME • FISHING •
ESSIONAL WILDERNESS OUTFITTERS ASS'N . . . MONTANA OUTFITTERS & GUIDES ASS'N
RECOMMENDED BY BURLINGTON R.R
REGISTERED BRAND 3E

FOREST SERVICE RESPONSE

WM-I-1

A The Lolo National Forest Plan provides several Forestwide Standards to protect wildlife as well as associated recreation opportunities. Standard No. 8 provides for "...quality hunting and fishing opportunities on the Forest by means of habitat manipulation, transportation management and planning, and by coordinating and cooperating with the Department of Fish, Wildlife, and Parks to provide for a wide diversity of hunting and fishing opportunities." (Chapter II, Section E8, Forest Plan)

Standard Nos. 21 through 28 are specific to wildlife and fish and provide habitat protection on the Forest through a variety of means. Standard No. 26 speaks specifically about providing a variety of hunting recreation opportunities by using project planning and road management to assist the Montana Department of Fish, Wildlife and Parks in meeting its goal of maintaining long hunting seasons with minimum restrictions.

Forestwide Standard No. 52 states, in part: "Manage Forest roads to provide for rsource protection, wildlife needs, commodity removal and a wide range of recreation opportunities. In most areas on the Forest this will involve leaving some roads open, closing some roads seasonally, and closing other roads on a permanent basis....Primary benefits to be considered are: optimizing big game production, providing a variety of hunting recreation experiences...." (Forest Plan Chapter II, Section E)

WM-I-3

MONTANA POWER COMPANY MPC GENERAL OFFICES 40 EAST BROADWAY BUTTE MONTANA 59701 • TELEPHONE 406 723 5421

May 2, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

The Montana Power Company (MPC) has reviewed the Lolo National Forest Plan Revised Draft Environmental Impact Statement.

MPC wishes to endorse Alternative e as the preferred alternative for the Lolo National Forest Plan. Alternative e provides minimum restrictions on accessibility to public lands. We oppose "locking up" resources by wilderness, roadless area or other such designations. A

We take exception to the insinuations on Page IV-14 that special uses such as transmission lines on Forest lands provide only for convenience and comfort. B

Electricity and natural gas are more of a necessity than a convenience. Take as one example, all the Montanans who heat their homes utilizing electricity or natural gas. A transmission line is the vehicle that takes energy to the distribution lines to serve homes. Without them, many would not survive our harsh climate.

We commend the Forest for including utility corridors in the Forest Plan (Management Area 5). The description of this area must, however, be expanded to include access roads for construction and maintenance of existing and future facilities. C Also, we strongly recommend each management area's management standards be revised to be consistent with the rules for siting linear facilities under the Montana Major Facility Siting Act. D

We appreciate this opportunity to comment.

Sincerely,

D. M. Sprague, Manager
Environmental Department

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LOLO NATIONAL FOREST
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FOREST SERVICE RESPONSE

WM-I-3

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B The citing of transmission and telephone lines as reflecting convenience and comfort-type special uses was meant to provide a readily familiar explanation of what could be considered convenience or comfort permits, without getting into a wordy discussion. The use of land for transmission purposes may certainly be considered a necessity to maintain acceptable levels of lifestyle or development.

C The description of Management Area (MA) 5 does not include the access roads located outside the corridor right-of-way, but provision for these roads is made in the MA 5 Standards (No. 4). Often times the roads needed to access a transmission corridor are of a multiple-use nature, not limited to corridor access, and should not be identified only with a transmission facility. Designation of all roads necessary to access a corridor are best handled in the use authorization.

D The rules for siting linear facilities under the Montana Major Facility Siting Act are meant to provide for compatible use and protection of land values/uses when the siting of facilities is being processed. The laws, regulations and policies governing land use planning on the National Forests are more far-reaching. The rules for siting a linear facility do not govern land use planning, but rather are subordinate to land use planning.

CO-I- 4

PRODUCING DEPARTMENT
DENVER OPERATING DIVISION

TEXACO

TEXACO
U.S.A.
P.O BOX 2100
DENVER, COLORADO 80201
(303) 793-4000

May 7, 1985

Lolo National Forest
Montana
Forest Plan Revised
Draft Environmental Impact Statement

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

Thank you for the opportunity to comment on the Revised Forest Plan and the third DEIS recently furnished to interested parties. We appreciate the time and cost that has gone into this plan.

Minerals and energy resources should be major issues in this plan; however, it does not appear that an in-depth analysis was undertaken as required under Forest Service regulations. A The Forest sits on top of the overthrust belt; therefore, all of it should be designated as non-wilderness and managed for multiple use to obtain the maximum net public benefit over the long term. B

The adjoining Bob Marshall Wilderness Area offers vast opportunities for a wilderness experience. It also offers sufficient habitat for the grizzly bear, where it can proliferate virtually undisturbed. Not every forest, nor the nation, can afford to give the grizzlies priority over minerals and timber. C Consideration of these facts should have significantly affected the Forest Service's recommendations. It is not felt that the best public interest is being served under your plan.

Very truly yours,

TEXACO INC.

G. M. Barrow
Land Department - Lease Records

GMB:JE

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LOLO NATIONAL FOREST
MAY - 9 1985
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FOREST SERVICE RESPONSE

CO-I-4

A The Forest has developed an inventory of minerals and collected information on oil and gas from all available known sources of information. This information was considered in the decisions for the Forest Plan.

B Energy leasing was a public issue addressed in the Forest Planning process. Other than designated wilderness areas which have already been withdrawn from mineral entry and leasing by the Wilderness Act of 1964, all other areas on the Lolo National Forest are open and available for leasing of hydrocarbons. Access to these areas for exploration/development purposes will be allowed, subject to special conditions to mitigate site specific impacts to other resource values.

C Under the dictates of the Endangered Species Act (1973) and amendments, the enhancement of habitat and recovery of the species listed is given highest priority over other federally sponsored activities. In areas designated as grizzly bear habitat, stipulations have been formulated to allow the possibility of commodity resources being developed, while still adhering to the intent of the Act.

WY-I-5

Casper Division
Production United States

Marathon Oil Company

P.O. Box 120
Casper, Wyoming 82602
Telephone 307/235-2511

May 6, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24 Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

RE: FOREST PLAN COMMENTS

The Forest Plan is lacking in the treatment, evaluation, and implementation in regard to minerals. There appears to be a significant absence of mineral analysis. A There is no clear indication of what lands will be leased, of the oil and gas potential of the leasable areas, or the economic benefits from leasing and development. B

The Forest Plan.

Although the National Forest Management Act is vague in its discussion of minerals in a Forest Plan, there are numerous other statues that clearly authorize minerals as one of the multiple uses: C

The 1920 Mineral Leasing Act
The 1947 Mineral Leasing Act for Acquired Lands
The 1955 Multiple-Use Mining Act
The 1960 Multiple Use - Sustained Yield Act
and most recently, the 1980 Energy Security Act

It is inconceivable that the plan does not address land allocations for mineral resources. If an analysis were done to relate potential with stipulations, this would enable you as planners to allocate management prescriptions in appropriate areas of mineral potential while balancing other resource uses. How can you compare mineral values to other resource values when no benchmark has been prepared for minerals? D

FOREST SERVICE
LOLO NATIONAL FOREST
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FOREST SERVICE RESPONSE

WY-I-5

A Public comments led to the revision of several portions of the minerals sections of the Forest Plan, including parts of the Rock Creek Chapter. The amount and location of the mineral activities and their associated environmental costs and benefits are now discussed more fully.

B The areas on the Forest open to oil and gas leasing are identified in FEIS Chapter II, Section D10; leasing is acceptable on all lands not specifically withdrawn, after analysis which will be done for new leases and reissuances. Other than designated wilderness areas which have already been withdrawn from mineral entry and leasing by the Wilderness Act of 1964 and small acreages in administrative sites, campgrounds and lookout towers (Appendix H of the Forest Plan), all other areas on the Lolo are open and available for leasing of hydrocarbons. The latter areas will be re-examined as mandated by Section 204 of the Federal Land Policy and Management Act (FLPMA) to determine whether the existing withdrawal is still necessary. Access for exploration/development purposes will be allowed to all available areas, subject to special conditions to mitigate site specific impacts to other resource values.

C Mineral exploration and development are among the recognized multiple uses on National Forest System lands. The Forest Plan recognizes current mining activity in Management Area (MA) 4. An inventory of mineral activity - past and present -, coupled with local geologic terrane and economic feasibility, was used to determine the mineral potential of the Lolo Forest lands.

D The general approach used by the Forest related to minerals and other resources is that mineral exploration and development will occur as provided for by the various mineral laws. Constraints protecting other resources are listed in each Management Area in the Forest Plan.

WY-I-5 p.2

In light of the proposed land exchange between the Bureau of Land Management and Forest Service, it seems apparent that you must include a more detailed analysis of minerals in your plan if you are going to be the sole steward of them. There is no concrete data or method to assimilate a leasing Environmental Impact Statement from the data presented. This leads to a fragmented time consuming approach to mineral leasing and environmental documentation. Further, the constraints on the preferred alternative are set without regard for minerals. Minerals are affected by all of the constraints yet none of these same considerations are imposed on other resources. E

The plan appears to be bias toward grizzly bears, roadless areas and wilderness instead of a balanced multiple use concepts.

- Please include an overall map of the general stipulations and restrictions to be imposed on oil and gas leases. F
- A map of current areas leased and areas proposed to be leased. G
- A map of areas closed to leasing and the reasons. H
- A benchmark analysis of the cost benefits from all phases of oil and gas operations (i.e. leasing through production). I
- An oil and gas potential map. J

Thank you for the opportunity to submit these comments and we hope they will be incorporated.

Sincerely,

Bradley G. Penn
Land/Environmental
Coordinator

BGP:dg

FOREST SERVICE RESPONSE CONTINUED

E Based on a prior environmental analysis of non-wilderness lands, a series of leasing stipulations specific to the individual Management Areas were identified. As a result, recommendations by the Forest on mineral leasing have consistently been completed well in advance of the due date established by the Bureau of Land Management.

Constraints on all soil-disturbing activities such as road construction, log skidding, or mineral exploration and development are similar in scope and application, in that they are applied to protect the soil and water resources while allowing the disturbance to occur. A road constructed for mineral development would be treated no differently than a road built for timber harvesting. Constraints placed on the removal of overburden to allow for mineral activities may appear stringent in comparison to other resouce activities, as there are no comparable activities associated with the development of other resources. Even these, however, are limited to the protection of on- and off-site soil and water resources.

F A Forestwide map showing the various stipulations and restrictions on oil and gas leases would be very difficult to decipher, because of the many symbols/patterns necessary and the map scale utilized in the planning process.

G A map showing existing leases is available on request at the Lolo Forest Supervisor's Office. There is a large volume of lease speculation; the amount of land leased and/or relinquished in any one month may be up to 250,000 acres. Thus, a map printed for inclusion in the Forest Plan would quickly become obsolete.

H Except for designated wilderness areas and the small parcels withdrawn for campgrounds, lookouts, etc., all other areas on the Lolo are available for leasing.

I Leasing is the only phase of oil and gas operations currently done on the Lolo. It would be difficult to construct a benchmark considering oil and gas without knowing the costs and benefits for operating on the Forest. The benefit of a benchmark analysis without this information would be negligible.

J An oil and gas mineral potential map is on file at the Forest Supervisor's Office, and is available upon request.

ID-I-6

President
LEROY J. VOGL
Louisiana-Pacific Corp
Moyie Springs, Idaho

Vice-President
JOHN E. REED
Boise Cascade Corp
La Grande, Oregon

Treasurer
STEPHEN H. ZWIGHT
Zwight Logging Co. Inc.
Yakima, Washington

Secretary-Manager
ROBERT S. NOBIS

Phone - 208/667-8121
664-2015

Intermountain LOGGING Conference, Inc.

P.O. Box 1177
COEUR D'ALENE, IDAHO
83814

April 25, 1985

Orville L. Daniels
LOLO NATIONAL FOREST
Bldg 24, Ft. Missoula
Missoula, MT 59801

Sir:

The enclosed resolutions were adopted by the 47th Intermountain Logging Conference at the annual meeting in Spokane, Washington, April 13, 1985.

They are the result of extensive study, several discussions and meetings, editing and selection. It would be difficult to emphasize or call your attention to any one of them. These four are most important to us. They represent the recommendations of over 800 registrants at this year's Conference.

We ask that you seriously consider these four resolutions and refer to them as you make your decisions.

Your comments are solicited and if this office can be of any further assistance to you, please don't hesitate to contact me.

Yours very truly,

Robert S. Nobis
Robert S. Nobis
Secretary-Manager

OKD
Route Chuck [illegible]
Bob RPM
Liijala
F. Stewart

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONTANA
APR 29 1985
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enc.

RSN:bg

VI-125

FOREST SERVICE RESPONSE

ID-I-6

Where applicable to the Lolo National Forest, the resolutions adopted by the 47th Intermountain Logging Conference, April 13, 1985 are compatible with the Forest Plan, specifically as follows:

RESOLUTION #1

THE STATE FISH & WILDLIFE POLICY

WHEREAS, fish and wildlife considerations will be an important part of each National Forest Plan;

WHEREAS, unrealistic fish and wildlife goals or unyielding policies can unduly and unnecessarily reduce timber sale programs through the planning process;

WHEREAS, employment and funding for local government in many Western communities is heavily dependent upon maintaining historical levels of timber harvest from State and National Forests;

NOW, THEREFORE, BE IT RESOLVED that the membership of the 47th Intermountain Logging Conference calls upon Western Governors and State Legislators to:

1. Investigate the process for developing fish and wildlife policies and goals in each State, and
2. Evaluate the implication of these goals on the timber or other natural resource-based industries in each State, and
3. Take appropriate legislative and administrative action to assure maximum compatibility between fish, wildlife, and timber in each State Fish and Game Department policy and planning.

RESOLUTION #2

THE MULTIPLE USE-SUSTAINED YIELD ECONOMICS

WHEREAS, The Multiple Use-Sustained Yield Act of 1960 and the National Forest Management Act of 1976 direct the United States Forest Service to manage the National Forests with consideration being given to relative values of the various resources, including timber production, wildlife management, water resources, forage, and recreation; and,

WHEREAS, the Forest Service is further directed by the Multiple Use-Sustained Yield Act to not necessarily manage for the greatest dollar return or the greatest unit output of these resources; and,

WHEREAS, the Forest Service has the mandate to be responsive to the needs of communities that are dependent on natural resource programs for their socio-economic well-being; and,

WHEREAS, some Forest Service timber sales have been shown not to generate positive short-term cash flows to the United States Treasury although total benefits may exceed total costs; and,

WHEREAS, it is recognized that Forest Service accounting methods may not allocate benefits and costs properly among all such resources; and,

ID-I-6
page 3

RESOLUTION #2 continued

WHEREAS, provisions for many of these additional benefits entail costs over and above those that should be normally experienced by private timber purchasers operating on National Forest lands;

NOW, THEREFORE, BE IT RESOLVED that the membership of the 47th Intermountain Logging Conference recognizes that the United States Forest Service must make investments in the future for the management of these various resources such as roads, timber stand improvement, planting, and other forest practices, and that prudent management of public resources requires the Forest Service to operate as efficiently as possible taking into consideration that it is not always possible to so with a positive cash flow to the United States Treasury; and,

BE IT FURTHER RESOLVED that the United States Forest Service continue to protect said National Forests from fire, insect and disease by the construction of needed roads to allow access for such protective programs as well as the management of range, wildlife, watershed, and recreational values which require continuous and timely forest management programs; and,

BE IT FURTHER RESOLVED that the membership of the 47th Intermountain Logging Conference recommends that the United States Congress should thoroughly review and understand the economics of National Forest timber sales before changing any current policies dealing with such sales on National Forest land; and,

BE IT FURTHER RESOLVED that the membership of the 47th Intermountain Logging Conference is very cognizant of the need for community stability in many Western areas by providing the timely flow of natural resources to various industries that provide employment opportunities for the citizens of these various States as well as providing direct monetary contributions to support schools and roads situated in these States.

A

RESOLUTION #3

RESOURCES PLANNING ACT

WHEREAS, the Nation has a Resources Planning Act (RPA) which includes RPA goals for National timber production; and,

WHEREAS, RPA goals are disaggregated to United States Forest Service Regions and Region One's goal being 1.225 billion board feet; and

WHEREAS, the greatest opportunity in the Northwest to meet or exceed this RPA goal is in Region One; and,

WHEREAS, the aggregate of the Forest Plans of the United States Forest Service to date make it appear that the United States Forest Service does not choose to meet the RPA timber target;

NOW, THEREFORE, BE IT RESOLVED that the membership of the 47th Intermountain Logging Conference urge the United States Forest Service to consider those available, legal alternatives that will provide the timber production available for both the Nation and the lumber industry.

B

FOREST SERVICE RESPONSE CONTINUED

A The discounted timber benefits for the planning horizon for the Lolo Forest are greater than the discounted timber costs, which means that overall financial returns of the timber program are positive. However, the positive values do not mean that below cost sales have been avoided (Chapter II, section 15). In spite of alternative and prescription cost-efficiency objectives, indications are that below cost sales will occur. Sales with high investment costs in the immediate future are followed by sales in the future that have lower costs and higher returns so that the entire set of management activities provide a positive return.

Recognition of the importance of community stability is a component of Net Public Benefits. The reason the RPA Alternative was deleted from furhter consideration was because of its negative impact on community stability (Chapter II, section 4b). As part of Net Public Benefits, the concern for community stability is interwoven throughout the FEIS document. It is listed issue No. 1 in the Timber section of Chapter I, and as issue No. 1 in the Social Economic section.

Measurement of social and economic impacts is described in Section V of Appendix B. The primary method used to assure community stability is the even-flow constraint discussed on B-58, which guarantees a sustained level of timber over time.

B An alternative was developed to meet the Forest's share of the National RPA 1980 objectives, as assigned by the Regional Forester. The analysis made for this alternative was equal to the analysis made for the Description of Alternatives Considered in Detail except that detailed mapping necessary to ground-truth the solution was not completed. In order to meet the RPA timber objective, departure from the base sale schedule of the Proposed Action was necessary. The RPA alternative would contribute toward satisfying the national demand for timber, but the magnitude of the departure could be disruptive to community stability.

RESOLUTION #4

EFFECTS OF NATIONAL FOREST PLANNING

WHEREAS, the initial alternative for the Flathead National Forest is complete and a final Forest Plan about to be selected; and,

WHEREAS, the selected alternative will govern the use and management of the Flathead National Forest for the next ten years; and,

WHEREAS, the preferred alternative has an immediate and devastating effect on the lumber industry; and,

WHEREAS, legal and available options exist that will provide the volumes of timber necessary for the lumber industry;

NOW, THEREFORE, BE IT RESOLVED, that the membership of the 47th Intermountain Logging Conference strongly urges the United States Forest Service to implement a Forest Plan that will provide the annual 130 million board feet necessary for the existance of the lumber industry in the Flathead Valley;

BE IT FURTHER RESOLVED, that the Flathead National Forest Plan is only one example of many Forest Plans currently being reviewed and the membership of the 47th Intermountain Logging Conference urges the United States Forest Service and Congress of the United States to consider the combined effect of all the National Forest Plans in the Intermountain Region and provide the volume necessary to sustain the timber industry in that region.

47th Session
INTERMOUNTAIN LOGGING CONFERENCE
Spokane, Washington
April 13, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 24 1985
RECEIVED

M-I-7
(p. 1 of 10)

PlumCreek Timber Company, Inc.
Clearwater Unit
700 South Avenue West Missoula, MT 59801
406-728-8350

May 23, 1985

Mr. Orville Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

Plum Creek Timber Company, PCTC, has reviewed the Lolo's second revision to the proposed Forest Plan and Draft Environmental Impact Statement. Our comments reflect our June 18, 1982 letter (attached) on the first revision to the proposed Plan and DEIS.

As you have stated in the attachment to the revised documents, the proposed Plan "remains relatively unchanged" and "is basically the same as earlier drafts". Therefore, our original comments are still applicable and valid. We ask that you address both our earlier comments and this current summary.

We are pleased that in the last few years the Lolo Forest has been cooperative in its land exchange program. We are, however, concerned that on paper the policy; Guidelines for Landownership Adjustment, is still too restrictive and potentially could hinder current practices.

On the one hand the guidelines state that landownership change will occur when the change provides a greater net public benefit. We support this position. On the other hand, however, the guidelines continue to present a long list of reasons why the Forest will not exchange lands and it does not list the benefits of landownership consolidation (see our 1982 letter, page 5). The criteria used to not dispose of land is based on subjective terms such as "significant or substantial adverse effects". How will significant or substantial be measured? Why hasn't the Forest listed the benefits of land exchange?

We ask the Forest to take a more positive approach in presenting the Guidelines for Landownership Adjustments , The recently proposed BLM-USFS land exchange demonstrates the values of land consolidation. We believe these same values should be presented in your land exchange policy. A

Two of the proposed wilderness areas, Swan Front and Monture, are adjacent to PCTC lands. The Plan needs to address and resolve potential access and/or land management problems between PCTC and the USFS where these ownerships meet. We recommend that the USFS include within its acquisition plan our properties in sections 1, 2, 3 T16N R14W, section 17 T17N R14W, and section 21 T17N R14W. The last two sections are incorrectly identified in the Swan Front wilderness proposal according to your roadless area map. B

FOREST SERVICE RESPONSE

M-I-7

A The Forest Service recognizes the benefits of a good land exchange program, as demonstrated by past actions. The Guidelines for Landownership Adjustments, Appendix I in the Forest Plan, are within the Regional Guide, and will continue to be the process used to test proposals for land ownership adjustments.

Land ownership adjustment is a primary tool to help achieve management objectives and to reduce conflicts between adjacent landowners. The Lolo is proceeding as rapidly as budgetary limitations and willing landowners allow to consolidate needed ownership adjustments.

It is neither possible nor practical for the Forest Service to acquire all private lands within the boundaries of the Lolo Forest. Many of these private lands provide goods and services necessary for the support of Forest activities which could not be provided by the agency. The acquisition of all private lands within the boundaries of the Forest is not compatible with national policy and direction.

The Guidelines for Landownership Adjustment are based upon guidance in the Northern Regional Guide (1983). "The pattern of ownership for other wildlands may change as a result of analysis associated with Forest Plans. However, private lands should not be acquired simply to: (1) improve Forest Service management efficiency; (2) relieve private landowners of lands having low commodity production potential; (3) improve a private landowner's management efficiency."

B The PCTC lands adjacent to the Swan Front-Monture area will be considered for acquisition by the Forest through the Land Exchange Program. The roadless area map will be corrected as suggested.

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(p. 2 of 10)

Mr. Orville Daniels
page 2

In our previous analysis of the Lolo Plan's Water and Soil chapters we made five recommendations. A major concern was the Forest's unjustified assumptions on water yield models. We urge the Lolo staff to review and respond to our earlier comments and recommendations.

Under our 1982 Wildlife section V. we requested clarification on the Forest's position on elk habitat, road construction limitations, snag management, livestock grazing, and grizzly bear management. The Forest needs to respond to these issues in regard to intermingled landowners. We request that the Forest state its intent to coordinate with landowners or resolve conflicts where wildlife issues could encumber private landowners. This especially applies to our lands within grizzly bear management situation 1 where any proposed activity requires a forest biologist's opinion. If the biologist believes the activity will affect the bear, consultation with the U.S. Fish and Wildlife Service is required. Our road and harvest program on PC lands within M.S. 1 is critically affected by this process. C

Our primary land use goal is to manage for timber production. We intend to remain professionally involved with grizzly bear management, however, we believe M.S. 1 designation on intermingled ownership is inappropriate with our economic objectives. We therefore request the Forest to either alter the M.S. 1 boundary to exclude our lands or discuss land exchange with us to acquire our properties within this designation. D

In summary, we support the Forest's intent to prepare an objective and workable action plan for managing the land and resources on the Lolo Forest. The Plan will be incomplete, however, without an integrated policy on land ownership supported by neighboring private landowners. PCTC is committed to working with the USFS to reduce costs and resolve management conflicts between adjacent private landowners. Your committment, too, is essential to this goal. We believe landownership consolidation is the tool to implement this goal.

We appreciate your consideration of our comments and hope you give serious attention to our recommendations in finalizing the Lolo Plan.

Sincerely,

D.B. Sigars
Manager Clearwater Unit

JAB/seg

attachment

cc: Tom Coston

FOREST SERVICE RESPONSE CONTINUED

C The Lolo Forest goals for snag-dependent wildlife, elk, grizzly bear and other wildlife are the same on all Forest acres, including checkerboard lands within given Management Areas (MA's). The Forest intends to meet each MA's wildlife objectives for National Forest lands within checkerboard ownership areas. Obviously, for those species of wildlife that are wide-ranging, such as elk or grizzly bears, their populations will be influenced by private land activities. Those factors will be considered at the project level; however, general wildlife constraints will still be applied to meet Forest Service responsibilities for wildlife habitat on public lands. In terms of road management, the Lolo will attempt to coordinate with private landowners to meet their needs as well as those of wildlife.

D Essential habitat for threatened and endangered species was designated on the basis of the needs of the animals and the habitat available. Essential habitat is defined as that land needed for species recovery. Thus, regarding the grizzly bear, some of the MS 1 lands (considered essential for recovery of the bear) do encompass checkerboard lands, which requires careful cooperation with private landowners. Most of the constraints on essential grizzly bear habitat that would involve adjacent landowners concern road management. Many conflicts can be resolved by careful coordination between landowners.

M-I-7
(p. 3 of 10)

June 18, 1982

Mr. Orville Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

RE: Response to Revised Lolo Forest Draft
Environmental Impact Statement & Draft Plan

Dear Mr. Daniels:

As a neighboring landower to the Forest Service and a major land manager of over 170,000 acres of forestland within the Lolo National Forest, BN Timberlands Inc. (BNTI) will be significantly influenced by the outcome of the Lolo Plan. We are, therefore, disappointed that the Forest, in its revised DEIS and Draft Plan, did not, in our opinion, adequately respond to our initial comments. These substantive comments were submitted to you in a letter dated September 22, 1980, and in a report titled "Lolo Plan and DEIS - Land Adjustment Analysis," dated August 27, 1980. We do not waive any of the positions held in these earlier commentaries.

In this regard, we request that the Lolo Forest seriously reconsider its treatment of our concerns and more thoroughly address both our earlier comments and the additions thereto which follow in light of national directives, presidential policies, and the Secretary of Agriculture's statement on Federal Forest Planning.

General Comments

1. Coordination with Landowner - The Lolo Forest did not give BNTI an opportunity, beyond that given to the general public, to effectively participate in the planning process. The National Forest Management Act (NFMA) regulations require Forest Service planning to fully recognize affected private landowners' needs and objectives. The revised DEIS states that an intensive effort was made by the Forest Service to involve and coordinate planning with private landowners. We did not find this to be true, as there was no special attempt by the Forest Service to involve BNTI in the Forest planning process.

E

2. Management Efficiency - Public sentiment, as well as national direction from Congress, the President, and the Secretary of Agriculture, all favor more efficient land management. The Lolo Forest does not comply

FOREST SERVICE RESPONSE CONTINUED

E The Lolo Forest considers coordination with intermingled landowners essential. Private landowners within or adjacent to the Forest, as well as the public, are personally contacted by Forest specialists through letters and news releases to solicit input in any land adjustment situation. Coordination is required as part of any environmental assessment process, as well as stipulated in the National Forest Management Act of 1976.

Ongoing consultations occur with private landowners, and the Lolo did consult with Plum Creek at the beginning of the Forest Planning process. Throughout the process, the Forest has consulted with the large corporations owning lands within the Lolo boundaries.

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(p. 4 of 10)

Mr. Orville Daniels
June 18, 1982
Page two

with these directives as is evidenced by the fact that management efficiency is de-emphasized in regard to landownership adjustment. F

3. Lands Analysis - The NFMA regulations and other policies and guidelines (refer to the more specific comments attached) require the Forest Service, in the Forest Plan, to analyze the economics of a project and to fully display a range of alternatives for the management proposal. There was no economic analysis or range of alternatives developed in the Plan for either the landownership issue or the land adjustment proposal.

The Lolo Forest states that it selected the proposed land adjustment plan because of direction from the Region 1 Plan (which has not been approved). This decision fails to justify the process used to select the proposal. It is essential that the Forest completely analyze the land issues to; 1) fully disclose to the public the array of opportunities, benefits, and costs of alternative landownership patterns and 2) assist in the selection of an adjustment plan which maximizes net public benefits. G

Enclosed is a more detailed analysis of our concerns which expands upon the general comments above. BNTI supports the Forest Service's goal to establish an integrated land management program, such as the Lolo Plan is intended to be. Essential to implementing this goal is the need to encourage and maintain a good working relation with neighboring land managers such as BNTI. For this reason, we urge the Lolo Forest to adequately consider our concerns in developing the Final Forest Plan. We are not suggesting that you arbitrarily implement our recommendations, but merely that you respond to them in a way which logically documents your rationale.

Sincerely,

Donald M. Nettleton
Assistant Vice President
Timberlands

JAB/mc
Attachments

bcc: Larry Blasing, IFRC
Jim Riley, NFPA
Jim Bentley, Champion
Pete Jackson - WETA
IFA
Max Peterson
John Crowell
L.J. Brady/N.J. Kirkmire
K.W. Kroschel
D.D. Whitesitt
D.B. Sigars
G.E. Buhre
Forest Supervisors
Montana Congressmen

FOREST SERVICE RESPONSE CONTINUED

F Management efficiency is a measure of how well a proposed action compares with other proposed actions. To presume that a particular land pattern is more efficient than another indicates that the criteria for measuring economic efficiency are obvious or agreed upon by everyone. The Lolo National Forest Appendix I, Guidelines for Landownership Adjustments, develops the criteria that will be used to judge the overall management efficiency of future proposals, based on all the resources considered, including the public interest.

G The EIS for the Northern Region Plan addresses the problem of checkerboard ownership. It considers four alternatives to solving this problem, ranging from total consolidation to no consolidation at all. This guidance was the basis for the 20 categories of classification used in the Lolo's landownership adjustment program. These 20 criteria include all facets of land adjustment priorities and philosophies.

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(p. 5 of 10)

Detailed Comments on the Revised Lolo Draft Plan and EIS

This critique contains several issues from the revised Lolo Draft Plan and EIS which the Lolo Forest did not adequately analyze in response to BNTI's initial comments dated September 22, 1980. Following these issues are our comments and recommendations. After each issue, reference is made to the exhibits included in the September 22, 1980, letter. The page numbers referred to are found in the revised Draft Plan (DP) and Draft Environmental Impact Statement (DEIS).

I. Legal Adequacy (Compliance with Laws and Regulations - A). All of DP and DEIS. Below are several requirements, as stated in several policies, regulations, and directives with which the Lolo Forest has not complied:

A. Coordination of planning with intermingled and adjacent landowner. As required by:

1. National Forest Management Act (NFMA) regulations-Code of Federal Regulations (CFR); sections 219(g), 219.8(b)

2. Forest Service Manual (FSM) 1920, 1922.46A

B. Landownership adjustment. As required by:

1. FSM 1921.21(7), 1922.46

2. NFMA regulations-CFR; section 219.10(7)

C. Notification of private landowner. As required by:

1. FSM 1920.73(g)

2. NFMA regulations-CFR; section 219.8(g)

D. Analysis of economic costs and benefits. As required by:

NFMA regulations-CFR; section 219.5(c) and (g). (There should be an economic analysis for a variety of landownership patterns.)

E. Adequate display of alternatives. As required by:

National Environmental Policy Act (NEPA); part 1502.1 requiring a full and fair analysis of the impacts and mitigating measures of each project. (A full range of landownership alternatives should be displayed.)

F. Management efficiency. As required by:

1. 1980 Recommended Renewable Resources Planning Program, pages 95-96

2. President Reagan's February 17, 1981, Executive Order 12291, section 2(c), requiring selection of the alternative having the least cost to society.

3. Secretary of Agriculture's expectations on efficient management, as stated in a January 26, 1982, paper by D. MacCleery.

4. FSM 1970: Economic and Social Analysis

Recommendation - All of the above directives need to be fully analyzed and integrated into the final Forest Plan.

H

FOREST SERVICE RESPONSE CONTINUED

H Concerning the legal adequacy of the Forest Plan and associated documents, the Forest has strived to read and understand all of the direction and meet all of the requirements. The adjacent landowners were notified and concerns solicited throughout the planning process.

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2. (p. 6 of 10)

II. Lands Issue (Plan's Format-B, Intermingled Lands-C)

A. Alternatives considered - DEIS, pages 11-47. Regulations direct the Forest Service to examine alternative opportunity levels, above and beyond existing levels, in order to maximize public benefits. The Lolo Forest did not examine any alternative to the proposed land adjustment plan. Through this proposed plan, the Lolo Forest restricts land exchange within checkerboard areas and, therefore, fails to provide a full range of landownership opportunity levels for maximum public benefits.

B. Affected environment - DEIS, pages 90-92. The DEIS states that the Lands issue was resolved by Forest policy, standards, and guidelines. The guidelines, i.e., the Region 1 Plan, used to guide the lands decision have not been approved. The DEIS also states that the environment will not be affected differently between land alternatives. This is incorrect, since various landownership patterns can significantly change the environment by providing opportunities for more intensive forest, wildlife, watershed, and visual management, among others.

Recommendation - The Forest should develop a comprehensive range of landownership alternatives, from adjustments within checkerboard areas to total consolidation. The intent of these alternatives would be to identify; 1) the opportunities beyond the existing situation and 2) the beneficial effects these alternatives can have on the environment. G

C. Analysis of the management situation - DP, pages 143-173. There is no economic analysis of the costs and benefits of the management situation for the existing landownership pattern, for the proposed landownership plan, or for a potential consolidated landownership plan. The public has a right to know the costs and benefits of various management decisions. Regulations require that these economic effects be evaluated. We maintain that an intermingled lands pattern creates higher costs to society than would a consolidated lands pattern.

Recommendation - The Forest Service should make every effort to identify ways to improve management efficiency on both public and private lands. This is essential in achieving national goals to encourage the wise and efficient use of public tax dollars. The Lolo Forest should analyze the economic effects of the proposed landownership plan and compare these figures with an economic analysis of a consolidated plan. F

III. Roads (Plan's Forest-B and Transportation Planning-D) DEIS, pages 95-97, 131-132, and 237-240.

A. The various road classifications, i.e., arterial and collector roads, are not defined. This could cause confusion. I

B. The Forest states that there is a limited opportunity to reduce road costs because road construction will access tougher country. However, the Forest also implies that most additional roads will be needed for resource activities rather than for mobility and travel efficiency. It is unconvincing that the Forest cannot allow more flexibility in its road standard policies and thereby reduce road costs. J

C. The revised draft does not discuss the potential effect federal activities will have on non-federal activities in designing logging roads. Coordination with adjacent and intermingled landowners in regard to road closures is also not addressed. K

FOREST SERVICE RESPONSE CONTINUED

I The various road classifications are defined individually in Chapter VII of the DEIS. A general definition, "Road Classifications," has been added to the FEIS Chapter VII.

J The Forest has some flexibility in road standards, and presently designs roads to the minimum standard consistent with proposed use, safety factors and resource needs. Road design will emphasize minimizing soil movement; drainage design will follow Forest guidelines for the particular type of soil involved. The most cost-effective method of road-building slash disposal that meets management and environmental needs will be used. An approved transportation plan and environmental analysis will be required prior to construction of roads on National Forest lands.

K In areas of intermingled landownership, the Lolo works with other landowners when roads are being planned, located, designed and maintained in the area.

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(p 7 of 10)

Recommendations

-A clear definition of road classification should be included. I

-The Forest can and should seek alternatives to reduce road costs per mile. This includes supporting Forest policy revisions which allow more flexibility in road standards. J

-The Final Plan should address the effect road location, road closures, and road maintenance will have on affected private landowners. K

Also, in the last sentence on page 98 of the DEIS, the sentence should read, "Local road construction will continue as government and cooperator needs dictate." L
On page 99 of the DEIS, the text should state that road closures will not limit use by holders of outstanding valid rights. M

IV. Water and Soil (Exhibit F) DP pages 3, 159; DEIS pages 8, 79; Appendix B-7e and B-7f.

A. The cooperative approach outlined for watershed protection is unacceptable. Cooperative efforts between public and private forest managers are inefficient due to differing management objectives.

Recommendation - The Plan should establish a clear delineation of ownership responsibilities through an active land exchange program. N

B. The Plan makes the erroneous assumption that increases in water yield following timber removal have no commercial value. However, research has continuously shown that the largest relative yield increase occurs in the late summer and fall. Therefore, the increased water supply has a definite market value because part of it is available during a period when demand for water is very high.

Recommendation - The Forest should reconsider its assumptions and revise its position on water yield to reflect current research. O

C. Soils information is needed in the Plan. Better scheduling should have insured completion of the Land Type Inventory prior to completion of the Plan. Also, there are other soils considerations that should receive higher priority than compaction. These include inventory, fertility, stability, and displacement. P

Recommendation - The Forest Plan should analyze these soil issues.

D. Minimizing stream crossings sounds desirable from a water quality standpoint, but effects on total road mileage (and total access costs) should be considered.

Recommendation - These effects should be analyzed and incorporated into the Plan. Q

E. Appendix B-7e - The ECA model was developed to predict increases in annual water yield following timber removal. More and more researchers are recognizing that channel degradation is the result of major peak flows, rather than increases in annual flows. These major peak flows are not significantly affected by timber removal.

Recommendation - Use of the model to predict stream channel degradation is erroneous and should be deleted from the Plan. R

FOREST SERVICE RESPONSE CONTINUED

L Forestwide Standard No. 49 in the Lolo Plan provides direction for transportation planning which meets the needs of adjacent landowners as well as the Forest Service.

M People holding valid rights to use roads on the National Forest are not adversely affected by road closures; Forestwide Standard No. 521 provides for this use.

N In areas of intermingled ownership, cooperation with adjacent landowners is a first step in watershed protection, as discussed in Forestwide Standard No. 14.

O The value of increased flow created by timber harvest is addressed on page IV-26 of the 1985 Revised DEIS. Increased flow does have a value in the arid west, particularly for downstream irrigation purposes. However, in order to capitalize on this value, storage capacity (dams) is necessary to regulate distribution.

P At the time that Forest Planning began, Land System Inventory (LSI) was considered as one of many possible bases. Because it was not complete at the time and monies were not available to complete the LSI within needed time frames, it was not used. In future planning efforts, the LSI will be much more extensively used. Because of its importance, the Forest has emphasized the completion of the LSI and stream surveys which have been incorporated into the Forest Plan. Stability and displacement are always a consideration; this is why the Forest regulates tractor logging over 35% and why sensitive soils are carefully reviewed before any development.

Q Protection of water quality is just one of many considerations taken into account in designing Forest road networks. Among the other factors considered are economics, wildlife use areas and sensitive soils.

R The "ECA model" (water yield increase calculation procedure) does not predict stream channel degradation and is not used for such. The model calculates the relative amount of increased runoff that will be produced in a watershed as a result of timber removal. The Lolo has established threshold levels of increased runoff beyond which channel impacts may develop. Once these calculated threshold levels are reached, a more detailed project evaluation is required.

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4. (p. 8 of 10)

F. Appendix B-7f - Sediment coefficients for management effects are extended from an extreme treatment and an extremely erosive site. In addition, the base sediment production levels used to calculate the increases are questionable.

Recommendation - These sediment coefficients and levels should be revised, otherwise the result of these problems will be to grossly over-estimate the impacts of timber management on fisheries and the aquatic resource.

S

V. Wildlife (Exhibit E), DEIS pages 214-215, 221; DP pages 85, 91

A. The relationship between the Lolo Forest's elk productivity objectives and intermingled BNTI lands has not been clarified. Is the Lolo's goal of increasing existing elk habitat productivity by 125% (i.e., a population increase to 11,580 elk) dependent solely upon the capabilities of USFS lands or will intermingled private lands be required to achieve and maintain this goal?

T

Recommendation - Clarify the above relationship.

B. Restrictions on road construction on Management Area 21, Old Growth Management, remain the same since the first draft, with no activity allowed from March 15 to July 15 to reduce distrubance to old growth nesting species, particularly the goshawk. This could pose real economic constraints on road construction, particularly if there is no actual nesting taking place.

Recommendation - Specific language should be inserted into the Final Plan to waive these restrictions if goshawks are not nesting in the area or if activity will be far enough from a nest site to minimize disturbance.

U

C. Snag management guidelines (Forest Policy #12, Plan page 4) have appreciably changed from the previous draft. They are directed at maintaining viable population levels for the most demanding snag-user, the pileated woodpecker. However, simply providing 20" DBH snags preferred by the pileated woodpecker in cutting units will not be enough.

Recommendations

-The snag management policy should specify that large snags for pileated woodpeckers should be allocated in proximity to Management Area #21 locations to provide required nesting as well as feeding habitat.

V

-Since the Lolo does not intend to preserve snags for wildlife within 200 feet of system roads, there should be an analysis of the planned future increase in system roads and its effect on achieving snag management objectives.

W

D. Management guidelines for Management Area #20 have substantially limited livestock grazing in grizzly bear habitat.

Recommendation - While this practice will have positive benefits for both grizzlies and conifer regeneration in timbered areas, intermingled landowners with grazing leases will have to be involved in revising existing allotment management plans.

X

VI. Land Adjustment Map and Appendix I (Exhibit H) DP pages 139, 168; Appendix I-2, 3, 7

A. The Forest has identified approximately 27,600 more acres of land that it intends to acquire than it intends to dispose of. This is short-sighted planning and will create land exchange problems.

FOREST SERVICE RESPONSE CONTINUED

S Project monitoring has shown that the base sediment levels used in developing sediment coefficients were not out of line. Sediment coefficients for management effects were not extended from extreme treatments in an extremely erosive site. Rather they were developed from a range of Forest Service and university research studies in many representative soil types.

T The Lolo's outputs for wildlife are based solely on National Forest lands; however, elk and other wide-ranging species are affected by adjacent private lands. In project level activities, adjustments are made in timber harvest scheduling, design and post-sale road management within checkerboard lands to minimize impacts on wildlife as well as conflicts with private industry.

U MA 21 areas are designed to provide opportunities for all old growth dependent species. The goshawk was used as an indicator species. Thus, the absence of goshawks nesting in a given stand would not necessarily justify a waiver of the operating season constraint, since the objective was to provide nesting opportunities for many old growth dependent species. However, extenuating circumstances may allow flexibility of this constraint, on a case-by-case basis, if impacts to old growth dependent species can be avoided.

V Twenty-inch snags won't, by themselves, provide nesting habitat for the pileated woodpecker. Snag management prescriptions are designed to provide feeding habitat for the pileated woodpecker and nesting/feeding habitat for all other cavity-users. Pileated nesting habitat was treated as old growth. This will be provided by scattered pockets of MA 21 (and wilderness, roadless and unsuitable lands). This, in addition to scattered feeding snags (covered in Forestwide Standard No. 25), will provide for the total habitat needs of the pileated woodpecker.

W Roads at a density of 4-6 miles per square mile, an estimate used for cable-logged ground, preclude snag retention on 20% of the land that is roaded. Thus, Forestwide Standard No. 25, which requires snag retention on 70% of the roaded portion of the Forest, recognizes this allowance.

X Grazing restrictions to protect grizzly bears should have little if any impact on permittees, due to the relatively limited amount of grazable land within essential grizzly bear habitat. Where allotments occur in essential habitat, particularly where multiple landowners are involved, close coordination will be needed.

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(p.9 of 10)

Recommendations

-to realistically achieve the land exchange goals, the Forest needs to identify more disposal areas than acquisition areas. This way the Forest will have enough lands to exchange out of; the result will be greater flexibility for both the Forest Service and the exchange participant. Y

-The Forest should discard the table in Appendix I on pages I-2 and 3 and replace it with a map showing general acquisition and disposal areas. Z

B. Regarding the proposed Lolo Forest's land adjustment map, there was probably limited interest to include the map within the text because the general public did not know it existed.

Recommendations

-For full public disclosure, the Forest should incorporate the proposed land adjustment map into the text. This will assist public review of the land adjustment issue. AA

-The Forest should request that BNTI and other affected private landowners provide maps showing where the landowner desires to exchange lands. These maps should then be displayed in the Forest Plan so the public can choose which adjustment proposal they prefer. BB

C. We have found several problems with both the land adjustment map and the land exchange section in Table 1, Appendix I of the Draft Plan. For example, only 160 of the 640 acres of BN Section 10, T16N, R16W, have been listed to be acquired. Other scattered portions of BN lands are designated "do not acquire," such as Sections 17, 21, 23, T19N, R30W.

These are only a few examples of the land adjustment proposal's piecemeal planning approach. We find it impossible to approve of such a proposal when it will create additional land management problems and will be less efficient for both the public and private land manager. A consolidated land adjustment plan could eliminate these problems.

Recommendation - Our suggestion under A. applies to the above comments. We also believe the Forest Plan should identify the following public and private advantages of a consolidated landownership pattern. Larger blocks of ownership: F

-reduce the need to survey property boundaries which lowers management costs;

-make it easier to protect and land from encroachments, trespass, and vandalism;

-require less time spent with other intermingled landowners on cooperative agreements such as cost share, coordination of harvest plans, forest planning, etc. Right-of-way acquisition costs and general administrative costs (timber sale layout, sales administration, etc.) also are reduced;

-improve the feasibility of implementing intensive management practices such as fertilization, thinning, etc.;

-reduce administrative conflicts which may result from different management objectives between intermingled owners. Exchange provides the opportunity for the public to acquire high public value lands in return for lands where future land use conflicts are less likely to occur.

FOREST SERVICE RESPONSE CONTINUED

Y Lands are identified for disposal and acquisition based on resource management goals identified in the Forest Plan. In the process of developing individual land exchanges, the Forest generally proposes more disposal areas than acquisition areas in order to provide flexibility in adjusting for land value differences.

Z The table in the 1982 Forest Plan Appendix I, pages I-2 and 3, has been removed. A map showing acquisition and disposal areas is available for public viewing at the Forest Supervisor's Office.

AA The proposed land adjustment map was available at the Forest Supervisor's Office for review by interested parties, and the demand for this review was minimal. Due to the limited interest, reproduction of the map for the Plan is an unneccessary expense.

BB Information concerning the availability of private land for exchange is gathered as individual land exchange proposals are formulated.

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6. (p. 10 of 10)

VII. Implementation (Exhibit B) DP page 125-132

In the Monitoring and Evaluation Chapter of the Plan, the Forest has not addressed the need to determine whether management practices on the Lolo Forest are precluding management practices on adjacent and intermingled private lands. We recommend that the Forest, in monitoring the Plan, determine how it is affecting the goals and objectives of the private landowner and seek ways to mitigate any negative impacts.] CC

FOREST SERVICE RESPONSE CONTINUED

CC The Forest will monitor the effects of Forest Plan implementation on private landowners and identify emerging issues that could require re-analysis.

JAB
6/18/82

COMPOSITE PUBLIC COMMENT	FOREST SERVICE RESPONSE
TX-I-8 Shell Western E&P Incorporated WA-I-9 U.S. Borax & Chemical Corporation Two members of industry expressed the belief that all areas of mineral or energy potential should be excluded from wilderness designation, even if no economic deposit is now known. Other areas within the Forest should be managed to provide reasonable access and the possibility of development for energy or mineral resources. They both expressed their interest in potential oil and gas exploration in that portion of the Lolo National Forest east of Range 20 West, believing that Subthrust Paleozoics (potential objective) may exist this far west beneath Overthrust Precambrian Belt rocks.	TX-I-8 WA-I-9 Other than designated wilderness areas which have already been withdrawn from mineral entry and leasing by the Wilderness Act of 1964, all other areas on the Lolo National Forest are open and available for leasing of hydrocarbons. Access to these areas for exploration/development purposes will be allowed, subject to special conditions to mitigate site specific impacts to other resource values.

CO-I-11

ARCO Exploration Company
Exploration Operations - Western U.S.
707 17th Street
Mailing address: P.O. Box 5540
Denver, Colorado 80217
Telephone 303 575 1000

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 31 1985
RECEIVED

May 23, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Re: Lolo National Forest Proposed Land and Resource Management Plan and Draft Environmental Impact Statement

Dear Mr. Daniels:

Atlantic Richfield Company appreciates the opportunity to comment on the Proposed Land and Resource Management Plan (LRMP) and Draft Environmental Impact Statement (DEIS) for the Lolo National Forest in Montana. As you know, ARCO Exploration has an active exploration program in Montana and is, therefore, concerned with the way the Forest Service chooses to manage important Forest lands.

The DEIS states there are approximately 950,000 acres currently under lease and that another 200,000 acres are under lease application. Further, it is stated that there is moderate potential for energy resources in the northern and eastern portions of the Forest. In spite of this potential, it does not appear that energy resources played an active role in land management planning decisions. With the exception of roadless and wilderness designations, oil and gas activities appear to be affected similiarly in all alternatives; and we do not feel that oil and gas resource potential has received the same consideration in the planning process as other resource values. There is no trade off analysis contained the the planning documents; in fact we can find no discussion of the planning issues on minerals in the DEIS. The planning issues themselves imply that in order for minerals to influence land allocations, the oil and gas potential must be extremely high or that production is taking place. We believe a detailed discussion should be prepared illustrating exactly how mineralized areas were addressed in the planning process. A

The National Forest Management Act regulations state in 36 CFR 219 that the probable effect of renewable resource prescriptions and management direction on mineral resources, including exploration and development, be recognized to be extent possible in the Forest Plan. Therefore, we believe that areas identified as having oil and gas potential should influence other resource decisions. Access to these areas should be restricted only by the minimum, not the maximum, legal standards established for environmental protection. In areas where conflicting resource values may outweigh mineral values, the Forest Service should B

FOREST SERVICE RESPONSE

CO-I-11

A In making land use decisions, the Forest considered the benefits and impacts of all known and potential resources, including the possible occurrence of oil and gas. Since no petroleum reservoirs or drilling targets have been discovered, no areas on the Forest have been specifically allocated to oil and gas production.

B Other than designated wilderness areas which have already been withdrawn from mineral entry and leasing by the Wilderness Act of 1964, all other areas on the Lolo are open and available for leasing of hydrocarbons. Access to the non-wilderness areas for exploration/development purposes will be allowed, subject to stipulations to mitigate site specific impacts to other resource values. Access requirements vary by alternative; they are summarized in Chapter II. Table II-35 shows the amount of land subject to restriction by alternative.

CO-I-11

YI-141

identify minimum environmental protection essential to meeting plan C
objectives for these resources.

On Pages II-55 and 56 of the DEIS, the Forest Service states that those
areas with the capability of producing more food for grizzlies or the
capability to reduce human-caused mortality will be managed to enhance D
the grizzly (with apparent disregard of the mineral potential of these
lands). Hence, all "essential grizzly habitats" have been allocated to
either wilderness or roadless management.

The Preferred Alternative allows for a departure from the timber
harvest schedule to contribute to a national need for housing lumber.
This exception, however, seems to be triggered by the belief that in
certain areas after a timber operation is completed, more food will be
available for the grizzlies. No such departure, however, is allowed E
for oil and gas. In fact, there is no recognition of the national need
for energy resources in the DEIS. Yet, the United States is a net
importer of oil and gas.

On Pages IV-II and 12, short-term use vs. maintenance and enhancement
of long-term productivity is discussed. It is stated that any
exploration and development of energy resources is likely to have a
long-term impact on the productivity of the specific sites since sites
in that area will not be as productive as they were before
disturbance. While it may be true that rehabilitation is difficult; it
is inaccurate to say that it cannot be done or that rehabilitation is
impossible to accomplish. While it is probably true that vegetation
may be lost during a well operation, it must be pointed out that the
vegetation is usually restored to its previous condition or even
enhanced through the use of native species and other approved species.
Further, the nature of oil and gas activities should itself be
considered short term since a developed field only lasts 25 to 30 years
-- exploration activities require a much shorter time frame.
Therefore, we disagree that there is irretrievable damage to a site F
where oil or gas is removed or that long-term productivity is
compromised. Statements such as these should be deleted from the
planning documents or rewritten to reflect an accurate assessment of
the situation.

With regard to wilderness resources on the Forest, according to the
DEIS the Lolo National Forest is already providing sufficient dispersed
recreation opportunities. The Lolo National Forest already has 130,000
acres of designated wilderness within its jurisdicition. With the
additional dispersed recreational opportunities provided via areas G
managed as roadless, over 171,000 acres, we do not agree that there is
a need for increased wilderness. Western Montana already enjoys well
over 3 million acres of wilderness. We find it difficult to
rationalize that additional wilderness is essential in all Montana
National Forests. It must be remembered that the Forest Service is not

---

C The listing of lease stipulations identified in each Management Area (MA) in the Forest Plan shows the constraints on leasing and exploration in that area. The extent of mitigating measures attached to a lease/geophysical permit will depend on the number and variety of other resources to be protected. Access restrictions will be that which is adequate to provide environmental protection for the other resources.

D The Endangered Species Act of 1973 and its subsequent amendments mandate that all federal land management agencies provide for habitat enhancement and recovery of all species appearing on the listing. Seventy-six percent of essential grizzly habitat on the Lolo occurs within lands allocated in the Forest Plan or by an act of Congress to roadless or wilderness management. Any activity, including minerals or oil and gas exploration and development, will be within the scope defined by law and direction. Those activities permitted within essential grizzly bear habitat must be compatible with recovery goals for the species. While minerals development is not precluded, special operating stipulations will be required to avoid adverse impacts on the grizzly bear. Minerals or oil and gas development also may be allowed in the other 24% of essential grizzly habitat - MA 20 (20%) and 20a (4%) - if it does not conflict with management goals for the area.

E The nation's dependence on foreign sources for minerals as well as energy resources is noted in Chapter VI of the Forest Plan. The percentage of domestic consumption supplied by imports for the minerals found on the Lolo Forest is listed there.

F The mineral impacts and evaluation section in Chapter IV has been rewritten to more accurately reflect the effects of mineral exploration and development on the environment.

G The Final EIS (FEIS) identifies and recommends to Congress roadless areas that meet the criteria for wilderness designation. There are 776,190 roadless acres on the Forest available for wilderness consideration; of that, approximately 223,600 acres are recommended for wilderness, based on the analysis in the FEIS, included in Appendix C.

As amended Sept. 7, 1983, National Forest Management Act regulations state that "roadless areas within the National Forest System shall be evaluated and considered for recommendations as potential wilderness areas during the forest planning process." Among the areas to be evaluated are: those previously inventoried as roadless; those contiguous to existing wilderness, primitive areas and administratively proposed wildernesses; those contiguous to roadless and undeveloped areas that have identified wilderness potential, and those which Congress has designated for wilderness study. The evaluation process is to consider wilderness values of the area, the effects of wilderness management and values foregone on adjacent lands, management feasibility, neighboring wilderness areas and the expected long-term effects on animal and plant species diversity.

CO-I-11

Mr. Orville L. Daniels
May 31, 1985
Page 3

the only Federal agency with a wilderness program. BLM wilderness proposals will be coming up before Congress in the near future. And it is mandated that diversity in the wilderness be considered prior to making wilderness recommendations.

We are concerned that such a large block of roadless acreage is having severe impacts on other multiple uses on the Forest, including oil and gas activities. Since the primary use of roadless areas is for primitive or dispersed recreation, we feel an alternative method of management should be considered. The Forest Service budgets for trail development. Therefore, we propose that the Forest consider utilizing roads as trails by closing them when the need for them ceases. The Forest Service could in this way shift roadless area boundaries to accommodate other activities on an as-needed basis. In order to provide primitive recreation opportunities, the Forest would then be able to close roads when they are not longer needed, thereby expanding the land base needed for primitive recreation. When the need arises, the Forest could open a road on a temporary basis to allow for a particular activity and close an unneeded road somewhere else to make up for the lost primitive recreation opportunity. We believe this proposal is an equitable solution to a serious management problem. H

In conlusion, we cannot support any of the Management Alternatives contained in the Proposed Forest Plan because we do not believe energy resources were afforded the same consideration as surface resource values. We believe it is essential for the Forest Service to revise the DEIS and Proposed Plan to reflect a comprehensive analysis of energy and mineral potential on the Forest and to incorporate these resources into the planning decisions, i.e., making appropriate land allocations which are more conducive to oil and gas exploration and development activities in areas where there is significant oil and gas potential. We suggest that in order to prepare this analysis that the Forest Service use the RMOGA Matrix System. (A copy of this proposal is attached.) This system has been used successfully by BLM in its planning efforts and by Forests outside of Region I. We suggest that you or your staff contact the planning team on the Wasatch-Cache National Forest in Utah to discuss their use of this system during their planning efforts. I

If you need assistance in this endeavor, please don't hesitate to contact us or Ms. Alice Frell at the Rocky Mountain Oil and Gas Association (RMOGA).

Yours truly,

C. M. Moseley

C. M. Moseley

(Note: Attachment is on file at the Lolo National Forest Supervisor's Office)

FOREST SERVICE RESPONSE CONTINUED

H Generally, Forest roads are built to access economically viable commodities, such as timber, for management purposes. Areas designated for roadless management either do not contain adequate commodities to justify the cost of road construction or possess resource values such as wildlife, watershed or threatened/endangered species habitat that can best be managed as roadless. The suggestion to close roads when they are no longer needed is part of the Forest Plan.

I The analysis of energy and mineral potential on the Forest was originally based on the U.S.G.S. McKelvey System. In order to use the RMOGA system, the Forest would have to disregard all original mineral potential assessments and begin again.

SL-I-12
(1 of 2)

Pyramid Mountain Lumber Inc.
SEELEY LAKE, MONTANA

May 29, 1985

FOREST SERVICE
LOLO
MAY 31 1985
RECEIVED

Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Re: Response to Third Environmental Impact Statement of the Lolo Forest Plan.

Dear Sir:

We have participated in and concur with the response you have received from the Inland Forest Resource Council concerning the third draft of the Environmental Impact Statement of the Lolo Forest Plan.

We would also like to make the following specific comments:

1. We are concerned with the economic impact of enlarging and strengthening the grizzly bear management area and designating more productive timber acres as unsuitable for timber production. A

2. We appreciate your efforts to work with the Department of Fish, Wildlife and Parks in helping provide a variety of hunting, recreation opportunities by using project planning and road management if the action taken does not disrupt harvesting operations by providing too restrictive operating seasons on timber sales or a "lock out" policy towards the public compared to the current situation. B We feel there is still too much emphasis on roadless recreation compared to the actual demand for this activity. C

3. The proposed timber sale volume of 107 million per year is not sufficient to sustain the timber industry as we know it today. Private timber has been heavily supporting local industries in recent years when Forest Service sell volumes have been down. However, this source will no longer be available to substitute for National Forest timber in the very near future. If the Forest Service is to be responsive to the local industry, it must take the responsible role of increasing to its true potential yield of timber, not reducing it. D

FOREST SERVICE RESPONSE

SL-I-12

A The intent within occupied grizzly bear habitat has been to do whatever is necessary to recover the grizzly bear, while minimizing the impact upon commodities. While more essential grizzly bear habitat has been designated on the Forest based on new grizzly bear data, the suitable portion of those acres has been retained in an allocation that allows timber harvest. This allocation, Management Area (MA) 20, utilizes timber harvest to optimize grizzly bear habitat. While the goal in this MA is foremost grizzly bear recovery, and secondarily timber production, actual timber yield will vary little from other lands allocated to timber harvest. Most of the change between this allocation and other timber harvest allocations will be in the form of seasonal constraints, timber scheduling and post-sale road management. While this will constitute some inconveniences, and in some cases higher logging costs, it is felt that timber yields will be only minimally impacted.

B A variety of hunting recreation opportunitites will be provided by the current mix of roaded/unroaded allocations, and by road management. Road miles currently open to the public will remain roughly static. Most new roads will be closed, although in some cases, new roads will be left open and existing roads will be closed. In areas of high big game sensitivity, the open road density will be about one mile of road per square mile. In addition, "closed roads" will be opened periodically for firewood removal. Big game productivity needs can be met at this level of access management. Timber industry needs will generally be met by this strategy, although seasonal activity restrictions will be necessary in some situations.

C Many roadless non-wilderness areas serve important recreational needs of the public, as well as absorbing use that might otherwise be concentrated in the wilderness, degrading the quality of that experience. Some roadless acres are not presently, or may never be economically or biologically suited to timber management. Although they offer little recreation opportunities, they are not considered for timber production for non-recreation reasons.

D To offer 160 MMBF each year for the next ten years would significantly reduce other resource outputs and could result in environmental damage. The Forest could provide an annual amount of 160 MMBF for a few years as long as the decade's Allowable Sale Quantity (ASQ) did not exceed 1070 MMBF. An estimated 150 MMBF of unregulated timber is also available during the next decade. In the future, the ASQ is projected to increase to 1310 MMBF and the unregulated timber estimate remains 150 MMBF.

Current timber purchases indicate a period of low demand for wood products. As demand increases, the Forest can increase timber sale offerings within biological, budget, and legal constraints. If demand were to increase beyond the decade ASQ, the Forest could address these changes through the Forest Plan revision process. The revision process includes full public involvement.

SL-I-12
(2 of 2)

Pyramid Mountain Lumber is heavily dependent on national forest timber and depends on the Lolo Forest for a significant share of its timber supply. We see artificial reductions in timber sale programs on all national forests we operate on through each new forest plan that evolves. E Our working circle includes the southeast half of the Swan Lake District of the Flathead Forest, the Lincoln District of the Helena Forest, the Seeley Lake District of the Lolo Forest, the Garnet Management Unit of the B.L.M., the Swan and Clearwater forests of the State of Montana, and a dwindling supply of local private timber. This would lead one to believe that a small business mill like ours should be able to survive with this sized resource land base. However, due to many constraints, the following indicates our "real world" of future timber supply:

Source	Proposed Annual Timber Sale Volume
Southeast half Swan Lake District-Flathead National Forest (Forest Plan FY '86-'90)	14 MM Bd. ft.
Seeley Lake District, Lolo Forest	7 MM Bd. ft.
Lincoln District, Helena Forest	7 MM Bd. ft.
Portion of Missoula District, Lolo Forest	2 MM Bd. ft.
B.L.M.	3 MM Bd. ft.
State of Montana, Swan Forest	4 MM Bd. ft.
State of Montana, Clearwater Forest	3 MM Bd. ft.
Small - private	2 MM Bd. ft.
Total:	42 MM Bd. ft.

To sustain our operations in the foreseeable future, we would need to purchase 70% of this total annual volume. It would be very unrealistic to assume such a purchase success would be possible considering the other headrig capacity in our working circle.

On behalf of all 116 direct employees at Pyramid Mountain Lumber, we want to emphasize our concern about any timber sale program that is below the full potential of the Lolo National Forest. Our jobs depend on you. E

Yours truly,

Gerald V. Parker

GERALD V. PARKER,
Timber Manager
PYRAMID MOUNTAIN LUMBER INC.

cc: Inland Forest Resource Council

FOREST SERVICE RESPONSE CONTINUED

E The Lolo Forest is concerned about the well being of timber purchasers and associated community stability. However, there are many non-timber resource considerations on the Seeley Lake District, as well as the remainder of the Forest. Without altering the level of non-timber outputs, it is not possible to offer a higher timber output, unless economically unsuitable timber is added to the allowable sale quantity. Alternative c was designed to show the tradeoff between non-timber and timber resources at an allowable sale quantity higher than that in the Proposed Plan.

M-I-14
(1 of 5)

INLAND FOREST RESOURCE COUNCIL
ROOM 220
110 EAST BROADWAY
MISSOULA, MONTANA 59802
PHONE (406) 728-1710

May 31, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
JUN - 1 1985
RECEIVED

Mr. Orville Daniels
Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59807

Dear Mr. Daniels:

Please accept this letter as the Inland Forest Resource Council's initial response to the Lolo's revised proposed Forest Plan and DEIS. Due to recent unanticipated membership losses and impending staff reductions in our organization, we were not able to complete our full response within the comment deadline. We intend to complete our analysis, however, and will be sending additional technical comments within the next week or two. In the meantime, this letter and the attached summary sheet will outline our basic thoughts on Forest's proposed plan. These comments will supplement the comments we've made on earlier drafts.

A In summary, we believe that the draft plan is not acceptable from a timber supply standpoint and that it must be revised extensively if we hope to avoid significant adverse impacts on the area's timber industry and timber dependent communities. The proposed allowable sale schedule is not sufficient to support the existing industry dependent on the Lolo National Forest. We will provide documentation in our technical response to support these statements.

We have raised this concern with both you and the Regional Forester prior to finalization of the draft plan, yet the Forest Service seem to have consciously chosen to disregard our concerns. It seems to us that the agency has lost sight of the fact that it has tremendous power over the lives of individual people and the communities in which they live. The Forest Service is principally responsible for the development and very existence of the forest products industry in Montana. Now it seems to be turning its back on the people who, as a result, depend on it for their way of life and economic wellbeing.

FOREST SERVICE RESPONSE

M-I-14

A The Forest's allowable sale quantity can adequately meet the needs of the timber industry and timber dependent communities. Although the proposed action, Alternative d, does not produce the highest level of timber harvest, it does produce a timber harvest level meeting current demand and increasing to meet projected future demand. During the next decade, the average annual allowable sale quantity is 107 MMBF. The Forest can provide an annual average harvest of 122 MMBF when the estimated unregulated volume is included. This level is higher than what has been offered and sold during the last five years - approximately 100 MMBF has been offered and approximately 60 MMBF sold each year.

If the "potential timber supply crisis" occurs in 10 to 15 years, the Forest could well meet this need. In the future, the average annual harvest is projected to increase to 146 MMBF. This harvest level is within 10% of the requested 160 MMBF. In light of the current economic uncertainty, the 146 MMBF harvest level is reasonably close to industry's stated need.

Alternative c comes closest to meeting the recommended 160 MMBF harvest level. The impact and risks to other resources are higher than necessary to meet the needs of being responsive to public issues and management concerns under this alternative. When timber harvests are maximized, other resource outputs are minimized. With a lower level of harvest, the resource outputs can be better balanced. Thus Alternative d produces a more balanced level of outputs amongst resources and is more responsive to issues and concerns. No one resource overrides another resource or places another resource at substantial risk.

While the Plan defines the maximum harvest level, the market better defines the actual harvest level. In order to become more cost efficient, the annual timber sale program will be designed to meet current market demand. The 1985 sale program was adjusted to 80 MMBF. This annual sale level is 20 MMBF below recent sale offerings and 20 MMBF above recent sale purchases. The accumulation of some unsold volume will make it possible to quickly respond to increasing demand. Thus annual sale volumes can be adjusted up or down depending on market demand. In fact, the Forest can provide an annual average of 160 MMBF on a short-term basis. Increases are limited to the extent that the decade's allowable sale quantity can not be exceeded. If market conditions demanded volumes beyond the allowable sale quantity, the Forest would do a sensitivity analysis to determine if a Forest Plan revision is necessaryy NFMA regulations outline the revision process which includes full public involvement.

The Forest attempts to offer a sale program responsive to the product demands of local industry. Different sale sizes and species mix are prepared to meet the needs of different loggers and mills. The Forest, however, can be only as responsive as the current timber inventory and advanced planning allows. At times, sale offerings will be influenced by urgent management needs. For example, in an effort to control the mountain pine beetle, the Forest estimates 40% of the decade's volume will be lodgepole pine. The Forest will continue to explore ways to cut unit costs and minimize road miles and standards without impacting or damaging other resources.

M-I-14
(2 of 5)

Our review of the draft plans released to date -- including the Lolo's -- has convinced us that it is possible to sustain harvest levels from the Region's national forests that will enable us to maintain a viable timber industry in the region without creating unacceptable adverse impacts on other resources. In fact, the Forest Service's own analyses show that it can be done, as all alternatives (including benchmarks) at least meet minimum legal requirements. A

The Lolo's DEIS clearly shows that the Forest can produce the timber we need without unacceptable environmental impacts. The detailed technical comments we're sending later will focus on ways to increase timber harvest on the Lolo without excessive conflict with the Forest's other management objectives. The key concepts we will stress will include: (1) maintaining as large of a suitable land base as possible to provide flexibility in distributing harvest over time and space to minimize impacts on wildlife and water quality; (2) aggressive road management to mitigate the impact of roads on wildlife security and water quality; (3) direct habitat improvement for fisheries, if needed to mitigate the impacts of timber harvest; and (4) intensive monitoring as an alternative to stringent limitations on timber harvest to meet water quality and wildlife management objectives. D B E C

We recognize that some tradeoffs may be required in the areas of water, wildlife, and recreation to permit increased timber harvest on the Lolo; nevertheless, our analysis suggests that these tradeoffs will be minimal. The critical contribution of the forest products industry to the region's economic base must be weighed against these potential impacts in the final decisions ultimately incorporated in the Lolo's final plan. If the Forest Service is willing to accept responsibility for the industry it helped create, then it must resume its historic role as the region's leading timber producer.

We strongly urge that the Forest Service rethink and clearly state the objectives of the Lolo plan. If the agency is deliberately moving away from timber production with a resulting shift in the economic base of the area, then people need to know so we can start looking for jobs and selling our homes. If it intends seriously to maintain a viable timber industry, then greater sensitivity to industry's stated needs is required.

Sincerely,

Wayne

Wayne W. Ludeman, Director
Timber Supply & Private Forestry

WWL/bls
Enclosure

FOREST SERVICE RESPONSE CONTINUED

A Community stability is an important objective of Forest planning. Community stability, however, is only one of the forest planning objectives under NFMA regulations. There are many other objectives including water quality, wildlife and fish, recreation and range. It should also be noted that timber and community stability are not synonymous terms. Although the timber industry is currently the single largest contributor to stability in this area, there is some public disagreement on how community stability can best be met - through development of timber resources or development of recreation resources. Here the tradeoff between increased timber harvest and decreased wildlife security, fish habitat and visual quality is considered detrimental to another industry. The Plan describes the way the Forest will meet the varied public demands with limited and at times competing resources.

B There is an aggressive road management program. Instead of prohibiting roading and logging in areas where resources are sensitive to development pressures, mitigation measures are taken to protect the resources. Mitigation measures, such as proper road design and location, can minimize the negative effects of road development - sediment can be reduced and water quality and fish habitat maintained. Many road closures are designed primarily to maintain the habitat effectiveness and security of wildlife. Under Alternative d, current open road density almost equals the density limits acceptable for wildlife security needs. Therefore, most new roads will be closed. Other road closure objectives include the need to reduce maintenance and erosion, avoid user conflicts and provide for diverse recreation opportunities.

C The Forest uses monitoring to avoid excessive limitations on timber harvest and other activities. The Forest Plan is based upon reasonable risk. The Plan will be adjusted when monitoring activities show either unacceptable effects or insignificant effects not requiring mitigation.

M-I-14
(3 of 5)

INLAND FOREST RESOURCE COUNCIL COMMENTS:
LOLO NATIONAL FOREST PROPOSED FOREST PLAN

EXECUTIVE SUMMARY

1. Analysis of mill capacity and historic timber supply trends show that the timber industry in Region One is facing a potential timber supply crisis within the next 10 to 15 years as a result of past Forest Service timber sale policy. The data show that the Region will have to resume its historic role as the region's leading timber producer and increase its timber sale program to at least 1.8 billion board feet per year (programmed sell) simply to maintain existing mill capacity. The data also show that the Region's national forests have the productive capability to do so.

2. We estimate that the Lolo will have to offer at least 160 MMBF per year of economically viable timber sales over the next 10 years to meet the dependent industry's immediate raw material requirements. The data show that the Forest has the productive capability to do so if it chooses. We believe that the plan must be revised to meet industry's needs.

A

3. The Lolo's analysis provides no rational grounds for taking productive timberlands out of the suitable land base to meet roadless recreation objectives. We suggest that the Forest allocate no tentatively suitable forest lands to roadless recreation or additional Wilderness. Intensified management of existing Wilderness and nonproductive roadless lands outside Wilderness will provide the best balance between roadless recreation objectives and timber production needs.

D

4. The projected impact of timber harvest and roading on water quality and fisheries have apparently had a major influence on the shape of the preferred alternative. However, the scientific literature suggests that these impacts cannot be accurately predicted. Given this uncertainty, we suggest that final plans include no harvest constraints that significantly limit timber production. The potential impact of timber harvest on water quality and fisheries can be largely mitigated by proper road design, construction, and maintenance; and by greater emphasis on direct habitat improvement projects. A good monitoring program is critical. If excessive impacts occur as a result of timber harvest, management practices or land allocations can be changed. If not, needless restrictions on timber harvest can be avoided by emphasizing monitoring as an alternative to stringent timber harvest constraints.

E

FOREST SERVICE RESPONSE CONTINUED

In the "Executive Summary" section of the letter, issues are addressed by number. The Forest's response corresponds to these numbers.

1., 2., and 11. The timber supply issues are addressed in the preceeding remarks.

D 3. and 7. The main reason 180,700 acres are allocated for roadless management is to meet semi-primitive recreation demands. While wilderness areas can provide remote recreational opportunities, recreation is not the main emphasis of wilderness. Thus non-wilderness, roadless acres absorb use that might otherwise be concentrated in wilderness.

Roadless acres also provide for old-growth dependent species and wildlife security. Grizzly bear security, however, is not the major reason for roadless allocations. Six of the 33 roadless study areas evaluated grizzly bear management and, of these, three have significant roadless allocation. The Forest recognizes that grizzly bear management can occur alongside judicious timber management and approximately 100,000 acres will be managed to meet both objectives.

The Forest was initially assessed for biological timber suitability, without regard to management alternatives. This assessment was then adjusted to meet the objectives of each alternative. The model generally selected the least cost-efficient timber lands for nontimber assignments when these lands met the nontimber objectives. More cost-efficient lands were selected only when needed to meet the requirements of the alternative. The model's mapped solution was then reviewed and adjusted to gain the distribution of land assignments required by the alternative. As a result, "suitable" timber lands may indeed be assigned to roadless or other nontimber management and be unavailable for timber harvest. These lands will be reconsidered for timber management during each Forest Plan mandated revision. Unsuitable lands will also be reevaluated for suitability.

E 4. Although the projected impact of timber harvest and roading on water quality and fish habitat can not be precisely predicted, it is known that there are impacts. These impacts, such as sediment production and runoff damage, will limit the extent of development. Thus, while development is constrained, it is not curtailed. Project constraints are designed to protect water quality and fish habitat. Direct habitat improvement projects are expensive and designed to restore the habitat of damaged areas. The Forest will therefore emphasize constraints and try to avoid the need for habitat improvement projects.

Some monitoring activities are designed to improve the ability to predict projected impacts. If monitoring demonstrates project constraints are not needed to limit resource damage, they will be eliminated.

M-I-14
(4 of 5)

5. We believe that an adequate suitable land base, use of well-designed minimum standard roads, and a vigorous road management program are the keys to minimizing conflicts between timber production and other resource values. The final plan should include the largest possible suitable land base (even if unneeded to meet timber production goals) to allow maximum flexibility in timber harvest scheduling to minimize the risk of adverse impacts on water quality, fisheries, and wildlife. F

6. We're concerned that the Forest's attempt to minimize visual quality impacts will significantly increase timber sale costs and the incidence of "below cost" sales. The final plan should limit protection measures to only those critical viewing areas most frequently seen by area residents and visitors. G

7. We generally support The Forest's approach to T&E species management. However, we question the need to maintain extensive roadless areas to provide security. Grizzly management objectives appear to be a major reason for the extensive roadless allocations in the proposed plan. We suggest that judicious timber harvest could occur on these sites without excessive impact on grizzly security if access roads are designed to the lowest feasible standard and permanently closed after use. D

8. We generally support the Lolo's approach to big game management; nevertheless, we're concerned that some of the constraints on timber harvest may be excessive and largely unnecessary. The DEIS suggests that forage rather than cover is the primary factor limiting elk productivity on the Lolo. Increased timber harvest should generally benefit elk under these conditions. The research literature shows that road closures can provide adequate security and a greater diversity of hunting experiences without imposing major constraints on timber harvest. H

9. We generally support management of critical winter range primarily for wildlife. Given the uncertainty of management practices on private winter range, the Forest should attempt to maximize the carrying capacity of winter range on the Forest to the extent compatible with meeting its other multiple-use objectives. We suggest emphasis on timber harvest, whenever feasible, as a cost-effective alternative to prescribed fire as a habitat improvement tool. I

10. We suspect that the Forest's approach to riparian area management may be overly conservative. Riparian areas include some of the most productive sites on the Forest. We suggest that the final plan include greater emphasis on timber production on riparian sites where feasible. J

FOREST SERVICE RESPONSE CONTINUED

F 5. Using 36 CFR 219.14 as the guide, the Forest has proposed an alternative with a suitable land base adequately meeting timber production needs. A larger land base is available under Alternatives a, c and e, but selection of one of these alternatives is not warranted under current conditions of the projected 10-year plan. Forestwide Standard No. 49 provides for minimum standard roads to meet resource, safety and public access needs. A vigorous road management program is required by Forestwide Standard No. 52.

G 6. The preferred alternative limits Retention and Partial Retention to viewpoints most frequently seen. These viewpoints and associated Visual Quality Objectives are on file and available for public review. Although management costs are higher as a result of implementing Visual Quality Objectives, all areas must still meet the test of economic suitability to stay in the timber base. There should be no increase in "below cost" timber sales attributable to Visual Quality Objectives.

H 8. The DEIS represents a summary of findings and research that, because of space limitations, cannot be fully displayed. Forest Plan Appendices B-7g, B-7j, B-7k and B-7l outline the process for developing elk habitat productivity and are available upon request. The process evaluated cover and forage needs and the role played by roads in habitat effectiveness. Timber sale modifications made to benefit elk on summer range are minor and occur on only 1% of Forest lands. Modifications for winter range are more substantial. Since forage is key on winter range, prescribed burning is necessary to stimulate browse. Activity must also be scheduled to protect seasonal security needs, such as calving.

I 9. Management Areas 18, 22 and 23 comprise 69% of the Forest's winter range allocation. In these areas, timber harvest followed by prescribed fire for slash disposal and site preparation will be the main tool for maintaining and improving winter range. The remaining 31%, in Management Area 19, is economically or biologically unsuitable for timber harvest. In this area, prescribed fire will be used to stimulate browse and retard tree invasion of forage areas.

J 10. The analysis of riparian area timber production focused on providing for riparian dependent resources. Timber harvest is scheduled to meet resource objectives on 53% of the riparian Management Areas 13 and 14. The remaining 47% is considered unsuitable for timber management.

m-I-14
(5 of 5)

11. We consider the Forest's approach to insect and disease problems generally sound and support accelerated harvest of stands threatened by mountain pine beetle. A

12. Existing wilderness areas and noncommercial forest lands outside wilderness should provide adequate old growth to maintain viable populations of old growth dependent species. Measures to maintain old growth outside these areas may be appropriate as long as they do not impose excessive restrictions on meeting the Forest's timber production objectives. K

13. We're not certain that the Forest's analysis of a single departure alternative is adequate. Departure may offers a viable (and possibly the best) opportunity for increasing early decade harvest. L

14. We're concerned that the Forest's guidelines for landownership adjustment are too restrictive. Opportunities for land ownership adjustment should be incorporated in the final plan whenever possible. We also suggest that the Forest clearly state its intentions for coordinating with private landowners where planned management activities (especially grizzly management) could conflict with or constrain activities on adjoining private lands. M

IFRC
5/31/85

FOREST SERVICE RESPONSE CONTINUED

K 12. Laws and regulations require the maintenance of viable populations of old growth dependent species. Although there are an adequate number of wilderness acres, noncommercial acres and unsuitable commercial acres to support these populations, the acres are not optimally distributed spatially or by vegetative type. To rely only on these lands for old growth habitat would create large biological "isolates" and species survival would not be guaranteed. In selecting lands necessary to maintain viable populations, unsuitable lands were selected first and suitable lands selected second. Suitable lands will be managed on a doubled rotation age to provide the necessary over-mature component of old-growth habitat.

L 13. The NFMA regulations allow three types of departure. The Alternative d1 departure has been analyzed and displayed in Chapter II, section 4 of the FEIS. This departure includes acceleration of timber harvest in the first decade to contribute to the national need for lumber used in housing. The other two departures were analyzed and do not apply to current conditions on the Forest. If conditions change, the need for early decade harvest can be reanalyzed during a Forest Plan revision.

M 14. The Forest has an active land adjustment program. Over 80,000 acres of land have been exchanged during the last five years with the Forest often leading the Region and Nation. When the Forest plans activities on lands of intermingled ownership, the adjacent landowners are informed and involved.

- The letter sent on June 28, 1985, contains additional background support for the above points and is included in the planning records on the Forest. It is not reproduced here due to the size of the document.

Timberlands
P. O. Box 8
Milltown, Montana 59851
406 258-5511

WM-I-16
(1 of 10)

Champion
Champion International Corporation

FORE[illegible]
LOLO [illegible]
MISSOU[illegible]
JUN 1
RECE[illegible]

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
U. S. Forest Service
Building 24, Fort Missoula
Missoula, Montana 59801

May 30, 1985

Dear Orville:

The managers and staff of Champion International Corporation, Timberlands, Rocky Mountain Operation, have completed their review of the revised Lolo National Forest (LNF) Plan and Draft Environmental Impact Statement (DEIS) dated January, 1985. Because of the long and complex nature of the public response period associated with this plan and the past two plan proposals, we request that all previous comments in our letter of June 24, 1982, covering elements of the January, 1982 plan, that have not changed, be included as part of this response. In addition, Champion has actively participated in and agrees with the results of the comprehensive industry reviews of the April, 1980, the January, 1982 proposed Lolo Plan, and the January, 1985 proposed Lolo Plan and DEIS as presented by the Inland Forest Resource Council under separate covers.

Employees of Champion actively participating in the review of the January, 1985 proposed Lolo Plan and DEIS are Ernest Corrick (Vice President and General Manager), Jon Dahlberg and Chuck Seeley (District Land Managers), and Lorrie LaBrie (Area Forester).

Decisions made regarding the present and future management of the LNF are of critical importance to Champion, its employees and the economy of western Montana. Champion is a major forest landowner within the LNF with approximately 500,000 acres within or in close proximity to the LNF boundaries. Champion's Forest Products Division operates two large sawmills, a remanufacturing plant, a large 300-million-square-foot-per-year plywood plant within the LNF, and a sawmill adjacent to the LNF at Silver City, Montana. Champion's Packaging Division's 1,900 ton-per-day pulp mill is located near the center of the LNF at Frenchtown is the only pulp mill in western Montana and requires both mill residuals and pulp logs from a wide geographic area for its continued operation. As a major local employer, we are very concerned about providing a healthful, satisfying and productive working environmental for our employees while assuring that federal land managers do a professional job in managing the publically-owned resources entrusted to their care.

The LNF DEIS is well organized and reflects a high professional quality. Essentially, Champion feels that it is a good plan, but we have some concerns about the timber resource outputs. The following are Champion's major concerns:

WM-I-16
(2 of 10)

1. The wildlife timber issue should be re-analyzed. Road closure programs should be initiated by the LNF to lower timber harvest conflicts and increase big game habitat potential.]A

2. Base harvest timber schedules are too low to meet the timber industry's raw material needs.]B

FOREST SERVICE RESPONSE

WM-I-16

A The Lolo National Forest has implemented an active road closure program that is responsive to the various resource needs identified, including benefit to big game summer and winter range use. The net effect of the transportation plan will be to maintain approximately the current road density open to unrestricted use. This is displayed on Table IV-24 (FEIS Chapter IV, Section 02). Also, see Forestwide Standard No. 52, which provides direction for road management.

B The base harvest schedules, as displayed in the DEIS, reflect the suitable land base and the timber volumes available from those acres.

Alternative d provides 1,239,000 acres of suitable timber land; of this, 728,649 acres of Management Areas (MA's) 16 and 17 will be managed with a timber emphasis. In addition, other suitable timber lands will be managed for timber outputs as well as other values such as wildlife winter range, riparian zones and visual quality.

An analysis of historical timber volume sold on the Lolo Forest shows a pattern of significant change over time. In the seven-year period from 1955 to 1961, the average volume sold was 78.4 million board feet (MMBF) per year. From 1962 to 1970, the average volume sold on the Forest more than doubled to 166.8 MMBF per year, with the highest being 206.5 MMBF in 1962. This represented a period of strong market demand. It was also prior to the establishment of environmental quality standards and restrictions through legislation such as the National Environmental Policy Act in 1969. During the period from 1971 to 1979, the market continued to be strong. However, the Roadless Area Review and Evaluation II (RARE II) and wilderness legislation passed during this period had some impact on volume offered in the Region. In 1980, the timber market collapsed as a result of a national recession and the five-year average sold on the Lolo from 1980 to 1984 was 58.4 MMBF annually. The peak historical period of timber sold on the Forest was from 1962 to 1970. Earlier factors mentioned influenced and continue to influence both the market and the ability of the Forest Service to offer timber.

Information from the current Forest Planning data base is relevant to today's market, the availability of timber from the present land base, and current laws, regulations and public values. The Lolo Forest is presently offering about 80 to 100 MMBF per year; however, in the past five years, the Forest has sold only an average of less than 60 MMBF annually.

Since the current supply from the Forest has exceeded market demands, the Forest presently has a large amount of volume prepared, but "on the shelf" or offered but unsold. The Allowable Sale Quantity (ASQ) for the Forest, that is the planned harvest for a decade, is expressed in terms of an average annual volume available. As market conditions change, it is possible to adjust volumes offered from year to year as long as the decade average volume does not exceed that specified in the Forest Plan. Therefore, with the large amount of "shelf" volume accumulating under these market conditions, the Forest could adjust to a short-term increase beyond the ASQ as long as the decade average volume was not exceeded and thus meet additional demands by local mills at the end of the decade. If market conditions continued high, demanding volumes beyond the decade average, the Forest would be required to address the problem through the Forest Plan revision process called for in the National Forest Management Act (NFMA) regulations, which includes full public involvement.

3. Roadless recreation has received too much emphasis in the proposed plan cancelling out many timber management opportunities.]C

4. Champion is concerned that visual quality objectives, old-growth constraints, as well as other constraints that have a potential to increase the number of "below cost" and "deficit" timber sales.]D

Enclosed are more detailed comments relating to the above concerns as well as other comments relating to the LNF Plan.

Thank you for the opportunity to comment. If you have questions, please contact me.

Very truly yours,

James E. Bentley
Logging & Procurement manager

kjg-NFPLAN
enclosure

FOREST SERVICE RESPONSE CONTINUED

In the Proposed Action, annual volume is projected as 122 MMBF per year (includes 107 MMBF regulated and 15 MMBF unregulated) in the next decade. In the future, as existing stands are harvested and replaced with managed stands, it would be possible to increase the ASQ. That volume is projected to increase to 131 MMBF annually with an additional 15 MMBF which can be harvested as unregulated.

The ability of the Lolo Forest to offer a higher volume of timber than that displayed in the Forest Plan is limited by the nature of resources available, public attitudes about how those resources should be managed, utilization and technology. The biological capability of the Forest to support a volume such as 160 MMBF would mean a significant reduction in other resource outputs as displayed in other alternatives analyzed in the Revised Draft EIS. In addition to biological problems of offering increased volumes for harvest, there is the problem of offering volume that is affordable. In other words, if other resources are to be maintained at levels desired by the public, increased timber volume would have to come from marginal lands.

The Forest will attempt to respond to local community needs regardless of the larger market issue. Although some of the timber types offered for sale at any given time are more profitable than others and it is difficult to predict demand over the years necessary to prepare a sale, the Lolo will attempt to offer species and volumes where they will sell on the Forest and to accommodate local small mills to the extent possible.

C Many roadless, non-wilderness areas serve important recreational needs for the public. Roadless recreation is an important resource on the Lolo. Areas selected for this emphasis, as well as being well suited for roadless recreation, are often uneconomical to manage for commodity outputs.

Approximately 363,300 acres will be managed for wilderness and 180,700 acres will remain roadless under the proposed Lolo Plan. Most of the remaining lands, 1,239,000 acres, are planned for development. The remainder includes nonforested lands, noncommercial forested lands, lands determined to be unsuitable for timber management during the life of this Forest Plan and miscellaneous designations such as administrative sites and heavily used recreations areas such as St. Regis Basin, Pattee Canyon and Blue Mountain.

D For clarification, the Forest Service defines a "deficit sale" as a timber sale that does not return a normal profit to the purchaser. The public sometimes defines a "deficit sale" as a sale where the revenues do not cover the costs. To avoid confusion, the latter situation will be defined as a "below cost" sale in this letter.

The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

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Base Harvest Schedules

Less than 30 percent of the LNF will be managed primarily for timber production. The LNF DEIS proposes a timber sale program averaging 122 MMBF per year in the first decade, with a long-term sustained yield of 178 MMBF by the end of the planning horizon. This first-decade level represents a program roughly equal to the past 10-year period. Programmed sales on the LNF averaged 117 MMBF per year from 1975 through 1984, and 160 MMBF from 1965 through 1971.

We believe that the LNF's proposed plan is not acceptable from a timber supply standpoint. If implemented as written, the proposed plan will have a significant adverse impact on local timber industry. Most of the mills in the LNF area were built during the 1960s and early 1970s when the sale program averaged about 160 MMBF per year. When the program dropped significantly in 1972, much of the timber had to come from private lands in the LNF area. Both industry and Forest Service analysts predict that private timber supplies in the LNF area will decline significantly in the next 10 to 15 years. To fill this timber supply gap, the LNF will need to offer affordable timber sales in the same historic magnitude of the 1960s and early 1970s.

B

We estimate, based on our analysis of mill capacity and historic harvest trends, that the LNF will have to sell at least 160 MMBF of affordable timber per year over the next 10 years to meet the dependent timber industry's raw material requirements.

Roadless Recreation

Another area of concern is that the LNF draft plan is heavily influenced by assumptions about the future demand for roadless recreation. Because of these assumptions, about 55% of the LNF (1,110,000 acres) will remain roadless and undeveloped. This seems to be an overreaction on the part of the LNF. The 1985 RPA program DEIS indicates that current and future demand for land based

C

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recreation in the northern Rockies is the lowest of all regions in the country. The distance of Montana from large populated areas simply does not lend itself to supplying viable roadless recreation opportunities to places like Los Angeles or Detroit. Roadless recreation will likely increase in the future, but the existing and future wilderness areas will go a long way to meet this demand. Certainly roadless recreation should not occur on "suitable" timberland base of the LNF. C

LNF Visual Quality Objective (VQO)

The DEIS notes that visual quality increases the cost of harvesting on some areas of the LNF. The draft document does not indicate how much this increase amounts to. It is our concern that this increase will be significant and will lead to increased "below cost" and "deficit" timber sales. Since the DEIS does not display the VQO impact on timber sale costs, we cannot adequately assess the appropriateness of the LNF VQO. The final EIS should disclose what these costs are and try to minimize them. E

Wildlife

The wildlife issue, related to elk security and hunter opportunity, stands out as being quite important on the LNF. An aggressive road closure program could provide higher quality elk habitat and increase hunter opportunity. This would also allow development activities necessary for timber harvest to proceed with reduced conflict. A

Old Growth

The revised plan specifies that "a minimum of 5% of the commercial forestland" within each component be maintained as old growth. Since extensive acres of wilderness, roadless recreation, custodial management, riparian, wildlife, as well as other unregulated allocations are proposed in the draft plan, it does seem necessary to require yet another constraint on the remaining lands allowing some form of timber management. Champion F

FOREST SERVICE RESPONSE CONTINUED

E The information to determine the difference in costs to maintain Visual Quality Objectives (VQO's) on the Lolo Forest is contained in technical information in the planning records. As an example, for a 0-60% slope in habitat group 4 with a stand volume of 10 MBF/acre, the cost/MBF for stump-to-truck and roading is as follows:

Modification	$35.40/MBF
Partial Retention	$37.00/MBF
Retention	$42.80/MBF

Thus, to manage an area as Retention VQO rather than Modification VQO would add approximately $7.40/MBF to the cost of timber harvest. Stump-to-truck and road construction costs are the only costs that vary according to Visual Quality Objective.

Although management costs are higher as a result of VQO's, all areas still must meet the test of economic suitability to stay in the timber base, so there should be no increase in what are commonly referred to as "below cost" or "deficit" timber sales.

F The wilderness, roadless and other areas mentioned were considered in contributing to the 8% old growth needed per drainage. In some drainages, these allocations provided surplus old growth and no additional old growth allocation - MA 21 - was needed. In many drainages, however, allocations of MA 21 were needed to provide either adequate acres of old growth habitat or diversity of old growth habitat types. Failure to do so would have created biologic isolates which would not have guaranteed the long-term species viability required by the NFMA planning regulations.

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(5 of 10)

recommends that this allocation be deleted because the old growth need is adequately supplied by other related allocations such as wilderness, etc., mentioned above. F

Utilization Standards

The revised LNF draft adopted the R-1 DEIS and plan utilization standards. We believe the best approach is to allow the market place to set the standards. As wood becomes increasingly in demad, economics will permit the use of smaller material. Forest Service utilization standards should reflect this trend as it develops and not attempt to force it. G

Uphill Skyline Yarding Distance

The LNF proposed plan endorses an uphill skyline skidding distance of up to 2,000 feet. One thousand feet is the approximate breaking point between a conventional gravity feed skyline system with 3-drum yarders and a skyline system with a sophisticated 5-drum yarder, haul-back, and intermediate supports. This more sophisticated system sharply increases overall logging costs because of the additional personnel required, lowered production, added machine cost, and added rigging. From our experience, skidding costs become prohibitive when skyline yarding distances exceed 1,000 feet. Champion feels that the plan should emphasize that uphill skidding distances should generally range near the 1,000 feet range. H

Intermingled Ownership

The following is a list of responses to the LNF Acquisition List presented in the proposed LNF Plan. I

1. Rattlesnake - Missoula County, Section 31, T14N, R18W - 640 acres: Champion is interested in exchanging its fee interest in this parcel.
2. Lolo Trail - Missoula County, Upper Lolo Creek - 5,240 acres: Champion is interested in exchanging a portion of its fee interest in these parcels.

FOREST SERVICE RESPONSE CONTINUED

G A minimum utilization standard is necessary to determine the amount of inventory available for harvest. The calculation of the ASQ is based on yield tables constructed from estimated volumes. In order to compute volumes, a utilization standard must be determined.

H The Forest Plan was developed on approximately a 1,000-foot road spacing for areas requiring skyline logging. Appendix G, "Timber Harvest System Selection Guidelines," of the Forest Plan states that the "maximum" uphill yarding distance is limited to 2,000 feet. Due to site specific conditions (sensitive soils, rock outcrops, etc.), a 2,000-foot yarding distance may be the only feasible way to harvest an area.

I Comments about land ownership adjustment areas will assist the Forest in future exchange packages. Since the Lolo began operating under the original Draft Forest Plan in 1980, more than 80,000 acres of land have been exchanged, with the Lolo often leading the Region and the nation in accomplishment. The Lolo is in regular communication with its neighbors concerning actions planned for National Forest System Lands which may affect private ownership.

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3. Blue Mountain - Missoula County, Section 7, T12N, R20W - 240 acres: Champion is not presently interested in exchanging its fee interest in this parcel.

4. Swamp Creek - Sanders County, Section 3, T20N, R27W - 290 acres: Champion is interested in exchanging its fee interest in this parcel.

The following is a list of U. S. Forest Service parcels in which Champion is willing to acquire by purchase or exchange if an agreement can be attained.

1. T16N, R11W - Section 4 -- 320 acres
   Section 2 -- 480 acres
   Section 12 - 480 acres
2. T16N, R12W - Section 32 - 480 acres
   Section 34 - 420 acres
   Section 35 - 400 acres
3. T15N, R15W - Section 18 - 640 acres
   Section 20 - 640 acres
4. T15N, R16W - Section 12 - 40 acres
5. T14N, R17W - Section 10 - 240 acres
   Section 32 - 320 acres
6. T13N, R18W - Section 8 -- 200 acres
   Section 10 - 640 acres
   Section 2 -- 480 acres
   Section 12 - 320 acres
7. T13N, R17W - Section 6 -- 640 acres
8. T12N, R19W - Section 10 - 40 acres
   Section 14 - 320 acres
   Section 12 - 400 acres
   Section 24 - 320 acres

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(7 of 10)

9. T12N, R21W - Section 24 - 480 acres
10. T13N, R21W - Section 10 - 160 acres
    Section 12 - 160 acres
11. T14N, R21W - Section 8 -- 160 acres
    Section 10 - 80 acres
    Section 14 - 120 acres
    Section 18 - 320 acres
    Section 20 - 320 acres
12. T12N, R22W - Section 18 - 320 acres
    Section 24 - 560 acres
13. T13N, R23W - Section 2 -- 200 acres
    Section 10 - 160 acres
    Section 3 -- 160 acres
    Section 13 - 40 acres
    Section 4 -- 480 acres
    Section 24 - 80 acres
    Section 14 - 320 acres
14. T14N, R22W - Section 18 - 240 acres
    Section 19 - 200 acres
15. T14N, R23W - Section 26 - 320 acres
    Section 28 - 480 acres
    Section 34 - 480 acres
    Section 14 - 640 acres
    Section 24 - 640 acres
    Section 36 - 640 acres
    Section 4 -- 520 acres
    Section 3 -- 100 acres

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(8 of 10)

16. T15N, R23W - Section 34 - 240 acres
17. T13N, R24W - Section 4 -- 640 acres
Section 28 - 640 acres
Section 32 - 640 acres
18. T14N, R24W - Section 8 -- 160 acres
Section 20 - 80 acres
19. T13N, R25W - Section 2 -- 320 acres
Section 10 - 640 acres
Section 12 - 160 acres
Section 26 - 640 acres
Section 36 - 640 acres
20. T14N, R25W - Section 35 - 120 acres
21. T15N, R25W - Section 1 -- 80 acres
Section 24 - 440 acres
Section 12 - 560 acres
Section 35 - 160 acres
22. T16N, R25W - Section 8 -- 400 acres
Section 20 - 40 acres
23. T16N, R26W - Section 1 -- 320 acres
24. T20N, R25W - Section 6 -- 80 acres
25. T21N, R25W - Section 17 - 80 acres
Section 32 - 40 acres
Section 33 - 80 acres
26. T19N, R26W - Section 12 - 80 acres
27. T20N, R26W - Section 6 -- 160 acres
28. T22N, R26W - Section 2 -- 360 acres
Section 26 - 640 acres

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(9 of 10)

VI-159

The following is a list of Champion parcels which Champion is willing to attempt exchange agreements.

1. T15N, R11W - Section 1 -- 320 acres
2. T16N, R13W - Section 7 -- 320 acres
   Section 17 - 80 acres
3. T12N, R18W - Section 11 - 560 acres
   Section 13 - 640 acres
   Section 14 - 40 acres
   Section 23 - 640 acres
4. T13N, R18W - Section 32 - 160 acres
5. T13N, R19W - Section 35 - 80 acres
   Section 25 - 120 acres
6. T13N, R22W - Section 18 - 400 acres
   Section 19 - 280 acres
   Section 29 - 640 acres
7. T14N, R22W - Section 2 -- 200 acres
   Section 12 - 160 acres
   Section 14 - 600 acres
8. T13N, R23W - Section 5 -- 320 acres
   Section 13 - 200 acres
9. T14N, R24W - Section 13 - 640 acres
10. T16N, R25W - Section 9 -- 320 acres
    Section 8 -- 240 acres
    Section 17 - 640 acres
    Section 19 - 180 acres
    Section 30 - 120 acres
11. T18N, R25W - Section 3 -- 120 acres

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(10 of 10)

12. T15N, R26W - Section 12 - 160 acres
13. T16N, R26W - Section 25 - 160 acres
14. T17N, R26W - Section 6 -- 80 acres
    Section 17 - 640 acres
    Section 18 - 40 acres
    Section 19 - 200 acres
    Section 20 - 160 acres
    Section 21 - 560 acres
    Section 24 - 320 acres
    Section 25 - 320 acres
    Section 26 - 320 acres
    Section 35 - 160 acres
15. T18N, R27W - Section 19 - 120 acres
    Section 33 - 130 acres
16. T20N, R27W - Section 5 -- 80 acres
17. T19N, R29W - Section 19 - 80 acres
18. T22N, R29W - Section 7 -- 440 acres
    Section 19 - 200 acres
19. T26N, R26W - Section 25 - 320 acres

kjg-NFPLAN
5/31/85

WM-I-18

W-I FOREST PRODUCTS, INC.

Thompson Falls Division
P.O. Box 369
Thompson Falls, Montana 59873
(406) 827-3511

FOREST SERVICE
LOLO NATIONAL FOREST
JUN 10 1985
RECEIVED

June 10, 1985

Mr. Orville Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, Mt. 59801

Dear Mr. Daniels:

As a part of the Inland Forest Resource Council team which has extensively examined the Lolo Forest Proposed Forest Plan, we fully support the response as drafted by I.F.R.C.. From our standpoint as a member of Montana's timber industry, the proposed plan is short sighted, highly biased against timber productivity capabilities and unacceptable relative to the sustaining of our industry.

Your staff appears to turn a deaf ear to the timber industry, while over-emphasizing the value and projected needs of roadless recreation on the Lolo Forest. Timber management seems to have taken the back seat to every other resource value on the forest as well. The concept of multiple use, wherein all resource values are subject to restrictions so as to make co-existance possible, has turned into one of putting all of the limitations on timber objectives to satisfy all other areas of management.

The proposed cut-backs in timber production on the Lolo Forest will bring more "winter kill" to our already weakened industry. Without a dramatic change in planning objectives, we certainly hope you are prepared for a dramatic change in this economy of Western Montana, and also in the bulging staff of the Lolo Forest.

Sincerely

Gary H. Cremer
Resource Manager

FOREST SERVICE RESPONSE

WM-I-18

Refer to M-I-14 Forest Service Response to the Inland Forest Resource Council.

SL-N-1

FOREST SERVICE
MAR - 5 1985
RECEIVED

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula,
Missoula, Montana, 59801

March 2, 1985

Dear Orville Daniels,

I am writing to you in response to the Revised Draft Environmental Impact Statement and Plan as made in the Proposed Lolo National Forest Plan.

After a close examination of the various Forest Plans A through G, there is no question in my mind that Alternative G is by far the best plan for the Lolo National Forest. It is my opinion that Montanans should strive to preserve 100% of the comparatively few remaining roadless areas that we have in this state, and the best way to protect these areas is through Wilderness designation. Already the grizzly bear, gray wolf, bald eagle, peregrine falcon and other respectable creatures are losing ground in Montana. As we all know, it takes many miles of territory to comprise ideal habitat for a single grizzly bear. If it is in fact a goal of the U.S. Forest Service to see threatened and endangered species recover to non-threatened status, then I can find no other alternative but to allow these species the room they need to thrive on. None of the other forest plans A through F are even remotely able to accomplish that goal, while Alternative G also provides plenty of acres suitable for timber harvest and management.

I would also like to commend the Lolo National Forest for coming up with a viable plan such as Alternative G and only wish that the other National Forests would follow your course of action by including every possible acre of roadless lands in their plans for Wilderness designation.

Thank you for your consideration,

Sincerely,

Susan M. Van Rooy

Susan Van Rooy
P.O. Box 129
Seeley Lake, MT, 59868

cc: Seeley RD

FOREST SERVICE RESPONSE

SL-N-1

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other other resource goals.

The Draft EIS reviewed 776,190 acres of roadless lands. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B Grizzly bear, gray wolf, peregrine falcon and bald eagle are the Threatened and Endangered species on the Forest. The goal is to recover each species to nonthreatened status. Forestwide Standard No. 24 has been designed to serve this goal. The Standard states that management practices in essential habitat of Threatened and Endangered species must be compatible with the habitat needs of the species. Grizzly bear habitat will receive special emphasis in Management Areas 20 and 20a, which will apply to 96,127 acres.

M-N-2

MAR - 6 1985

RECEIVED

MARLEN TWETEN
610 East Sussex Avenue
Missoula, Montana 59801
March 6 , 1985

Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Sirs:

Enclosed are my comments on the Revised Draft Environmental Impact Statement for the Lolo National Forest Plan.

Generally, the analysis has been improved. It seems that no longer does the Forest Service promise everything to everyone. In the past, it was implied that with enough money everyone could have all they want from the forest resource base.

Before the Forest Service disposes of land, it should make sure the land will not be subdivided or that it is not situated along important recreational waterways. For example, along the Bitterroot River there are a number of isolated 40 acre tracts. These lands, by being kept in their natural state, maintain floodplains and recreation. A

We still do not have enough data to assess the impacts of increased water yields (from timber harvest) on stream bank stability. First and second order streams may be able to transport relatively large increases in volume without bank erosion. However, the main streams could be vulnerable. Examples are Miller Creek, Rock Creek, and the Bitterroot River. The lower portions of the Blackfoot and Clark Fork Rivers can carry large additional flows without bank erosion because these streams have profiles adjusted to such a volume. B

The analysis separates the impacts of timer harvest and roads. This separation seems to portray logging as a relatively small conflict with water quality, soils, recreation, and wildlife. Logging and roads are inseparable and taken together produce the large adverse impacts on other resource values. C

FOREST SERVICE RESPONSE

M-N-2

A The Lolo Forest will consider the merits of each exchange proposal to ensure that the resource values of non-Federal lands exceed the value lost in the exchange. Restrictions limiting the use of Federal lands which have been disposed of would diminish the value of the exchange itself.

B The Forest's water monitoring program collects data on streamflow and water quality parameters such as sediment and sediment load. The intent of the monitoring is to build a sufficient body of data to be able to detect changes in channel condition and other indictors of possible impact.

C The FEIS in Chapter IV discloses the effects of roads and timber harvesting separately because they are different activities which impact the land. The discussion on roads immediately follows the discussion on timber harvest. The analysis and scheduling of timber harvest and road construction were done simultaneously.

M-N-2

The only place in the document where the true impact of timber harvest on recreation and wildlife is given is on the "ERRATA" sheet. This situation is unfortunate. Clear cutting drastically alters an area's value for recreation (who wants to hunt and recreate in these areas?). The remaining unclassified roadless units serve a critical role in providing a "natural" setting for recreation. As these areas are developed, the recreational and wildlife resource base is reduced. Alternative e contains contradicting goals in this respect. This alternative states that a high level of timber output will benefit recreation by opening a sizable portion of the forest to access. After timber harvest is completed, the recreational value of the land will be very low. D

Table II-37 lists road maintenance energy requirements as being the same for all alternatives even though total roads will triple for the high timber output. Something is wrong.

It should be mentioned that the alternatives with high road densities will raise energy consumption by providing more motorized recreation opportunities. E

Administrative protection of roadless areas looks good in theory but leaves much to be desired in actual practice. As long as the areas are open to mineral and energy exploration, their fate remains uncertain. In the Little Missouri National Grasslands (Custer National Forest) roadless acreage which was supposed to be protected in the land use plan was reduced by half in a ten year period. This reduction was cuased by petroleum exploration and development. The same fate for a least part of the roadless acreage in the Lolo National Forest will result with the loopholes in the management plan. F

There has been a noticable improvement in the quality of clearcuts in the last decade. A number of measures could be taken reduce the impacts. Soils should be replaced on fire lines, skid trails, and areas adjacent to slash piles. Improperly burned slash piles should be leveled. Ruts created by the maneuvering of bulldozers should be filled in. Can volunteer labor be used to accomplish this task? G

Under environmental consequences of establishing wilderness and roadless areas, the plan fails to mention that these two designations maximize water, air, and soil protection. Wildlife habitat also is best preserved in these designations. H

Of all the alternatives, a compromise between alternative b and d would greatly assist in protecting non-market values. I support wilderness for the Hoodoo, Lolo Creek (part), Quigg Peak, part of Stoney, and Sapphire Divide. Wilderness in the last three would assist in protecting water quality in Rock Creek. I

Sincerely,

Marlen Tweten

Marlen Tweten

FOREST SERVICE
MAR - 6 1985
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FOREST SERVICE RESPONSE CONTINUED

D In addition to wilderness experiences, the Forest provides a wide range of roadless, motorized and developed recreation. Expected demand for all types of recreation experiences, including primitive type recreation in roadless areas, will be more than met by the land allocations and management direction in the Forest Plan. Development of roadless areas may result in a change in the type of recreation opportunity experienced - for example, berry picking, firewood gathering, camping and other activities utilizing roads - may replace back country hiking and backpacking, and the intensity of use will not necessarily decrease.

E Total roads open and maintained varies by only a few hundred miles between alternatives. There is no significant difference between alternatives in this respect. Demand for total motorized recreation is projected to be the same for all alternatives; therefore, energy consumption shows no measurable difference.

F It is true that mining activity may legally occur in areas designated as roadless. This potential also exists under certain conditions in wilderness areas. The Mining Act of 1872 grants the mining industry the authority to have access to claims on public land.

G Volunteers provide a substantial portion of work on the Lolo Forest. The impacts pointed out primarily deal with aesthetic values which are dealt with on a project basis. These measures are generally prescribed especially in visually sensitive areas.

H The technology and knowledge available for wildlife habitat management can often best be applied outside of wilderness to provide a continuing productive habitat for all of the needs of wildlife.

The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 acres of wilderness. The recommended wilderness areas are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

I In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

The Forest Plan, in the Rock Creek Chapter, provides a specific committment to manage Rock Creek as a unique resource. The chapter describes management of the Rock Creek drainage planned for both the Lolo and Deerlodge National Forests. In Chapter IV, the Forests recognize that Rock Creek is a Blue Ribbon trout stream and that the values that characterize a Blue Ribbon trout stream will be maintained. As part of the fisheries production objective, both Forests intend to manage the headlands to provide the quantity and quality of water necessary to maintain the total Rock Creek aquatic ecosystem.

WM-N-3

March 6, 1985

FOREST SERVICE
MAR - 8 1985
RECEIVED

To whom it may concern,

Regarding the 50 year plan...

1. All roadless areas should remain wild. A

2. Any animal habitat (grizzly, wolf, caribou, etc.) threatened by the Endangered Species Act should have priority over any exploration and development, ie logging, oil, gas, mining etc. B

3. A 500 year plan should be considered! C

Your population, needs, and wants projections have no basis. Someone pulled numbers out of thin air or were contrived by special interests (oil, gas, mineral) to exploit these and other resourses without looking ahead. The boom and bust mentality still prevails. (Business as usual) D

Remember, the Forest Service is a steward of our national forests, not an agency to sell to the highest bidder. Your duty is to protect and enhance the resources for many generations to come.

There are plenty of existing tree farms(12 million acres in Montana) for comercial logging and regeneration. Gas and oil from Prudhole Bay is currently exported. Why open up more areas when there is a surplus and jeapordise animal habitat?

Approximately 2% of the lower 48 remain in a wild state.Three generations ago most of the area west of the Missippi River ~~were~~ was "wilderness". It's our duty to protect whats left! E

Will you help?

Sincerily,
Merrill Bradshaw
Merrill Bradshaw
520 Agency Rd
Arlee, Montana 59821

FOREST SERVICE RESPONSE

WM-N-3

A The National Forests are managed under a series of laws passed by Congress, dating back to the Creative Act of March 3, 1891, and the Organic Act of June 4, 1987, which require these lands be managed for multiple use. In more recent years, the Multiple Use-Sustained Yield Act and National Forest Management Act require that National Forest be managed for wood and forage as commodities as well as recreation, watershed, wildlife habitat, wilderness and other uses.

The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B In accordance with the Endangered Species Act, all habitats designated essential for recovery of a threatened or endangered species will be managed to recover the given species. Other activites that may conflict with recovery are constrained or modified to meet the recovery goal. References to this can be found in Chapter II, Section D5c, of the FEIS, in Appendix F-A (minerals removal stipulation) and in the descriptions of Forest Plan Management Areas (MA's) 20 and 20a (these MA's are also delineated on the Forest Plan map).

C The National Forest Management Act of 1976 provides the requirements for planning the National Forests and that the plan "(5) be revised (A) from time to time when the Secretary finds conditions have significantly changed, but at least every fifteen years,.....".

D Projections of expected resource use are assigned to the Forest from national production estimates prepared for the RPA program, as required by the Forest and Rangeland Renewable Resource Planning Act. The timber demand estimates for RPA come from a national timber model developed by Adams and Haynes (1980) which uses population projections developed by the U.S. Water Resources Council.

E The Forest Plan established land management allocations - Management Areas - for the entire Forest. The allocations determine the major resource emphasis for these areas. In areas suitable for timber management (basically MA's 16 and 17), the objective is to provide for healthy stands of timber and to optimize timber-growing potential. In other areas, the major resource emphasis ranges from visual quality to big game winter range to riparian habitat. By allocating a given piece of land to the management practices for which it is best suited, the Forest Service provides long-term protection to and enhancement of the particular resources present.

M-N-4

LTR ADDRESSED TO
PLAINS/T. FALLS DIST. RANGER

March 2, 1985

Dear Sir,

I am writing to express the opinion of my family that Knox Creek and Dry Creek be excluded from logging and road construction. This opinion is based primarily on emotion. A We like hunting and hiking in predominantly roadless areas and judging from the traffic jam in Dry Creek on opening day of hunting season, so do many others. From our point of view, it is unsatisfying to drive up to an animal and shoot it. For those who enjoy doing this type of hunting there are plenty of suitable places available. But there are not many places like Knox-Dry Creek--non wilderness areas where you can walk for miles in any direction, encounter an occasional elk and not be distracted by motors, roads, or other humans.

If uniqueness is to be considered along with visual beauty and hunting value, then Dry Creek should be left intact. In out opinion, stewardship of the forest should provide for saving pockets of public land for the preservation of elk hunting as we now know it in one of its hardier forms--where you don't need a horse to pack in and camp, but where one would come in handy if you bagged anything bigger than a grouse. B

Thank you for listening,
Mike Childs and family

Mike Childs
15720 MULLAN RD
MISSOULA, MT 59802

P.S. Just to keep the record straight - my wife read this and said she prefers the solitude there above any "darned" hunting.

FOREST SERVICE RESPONSE

M-N-4

A The roadless lands of Knox Creek-Dry Creek are located in the Mount Bushnell roadless area. The EIS reviewed seven alternatives for this area, with Alternative d selected as the preferred alternative. During the first decade, half of Mount Bushnell will be developed and half will remain roadless.

The impact of roads required for timber harvest can be reduced by road closures. During the planning process of individual timber sales, road closure will be evaluated. Your name has been forwarded to the Plains/Thompson Falls and Superior Ranger Districts. The districts will notify you as individual timber sale projects occur in the Mount Bushnell area.

B The Forest will continue to provide non-wilderness opportunities. Under Alternative d, 180,700 acres of the Forest's roadless acres will remain roadless. These areas are shown on the Forest map as Management Areas 10 and 11. In addition, 131,152 acres will remain undeveloped and roadless during the first decade.

P-N-5

Mar. II, 85

[illegible]
[illegible] NATIONAL FOREST
[illegible] Ft. Missoula
[illegible], Mt. 59801

[illegible] Sirs;

Thank you for the opportunity to participate in the proposed [illegible] NATIONAL FOREST PLAN. The over all plan is one of most [illegible] one [illegible], To much emphisise is placed on wilderness and the grizzly [illegible] habitat. We are all environmentalist, how ever a majority of the [illegible] prefer to lock up the nations energy resources into an all [illegible] of wilderness when the need for economic improvement [illegible] essential to the economy of the nation. [illegible] over 14,000,000 acres in designated wilderness, the time for recog- [illegible] the fact that we have a mineral problem is here. Action stimulating [illegible] production and stockpile strategic materials against future [illegible] of a high national priority. More information and [illegible] must be gathered and disseminated [illegible] of our mineral reserves [illegible] from mineral exploration at [illegible] attempt to remove any more lands [illegible] could only add to the all ready depleted supply. [illegible] economics must work together if this nation is to survive. [illegible] the reforestation programs to coincide [illegible] to accelerate the [illegible] and the remaining available supply. [illegible] the original multiple use plan is the only way to [illegible] of our National Forests and that includes all [illegible] recreation, fish, wildlife, mineral exploration and forest products. [illegible] for a better economy and the good of all [illegible].

[illegible] must be given to wilderness and the grizzly bear habitat [illegible] upon the survival of our industrial economy that provides [illegible] for the economy of the nation and the very livelyhood of the american [illegible].

A well [illegible] oiled highway through the wilderness is a beautifull site [illegible] all of the people a chance to observe nature. In Switzerland there is a sight seeing train that winds its way to the top of a wooded mountain [illegible] all those who are physically impeded the opportunity to observe nature as well as the physically fit. [illegible] may very well be improved by expanded [illegible] and economical programs [illegible] Switzerland, Austria and Germany, Countries that [illegible] of countries such as [illegible] have found ways to combine ecology and economics.

Thank You
S. C. Silverthorn

S.C.Silverthorn
[illegible] Cr.Dr.
Plains, MT. 59859

FOREST SERVICE [illegible]
MAR 12 1985
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VI-107

A
B
C
D

FOREST SERVICE RESPONSE

P-N-5

A It is essential to combine sound ecology and sound economics - that is the Forest's objective in land management. The EIS evaluated the effect of alternatives on local economies and on natural resources. Alternative D was selected as the preferred alternative because it adequately meets market demands without straining the resource capability of the land.

B Alternative d balances resource demands and public demands. The grizzly bear is now a Threatened and Endangered species because its habitat demands have not always been met. Therefore, the grizzly bear receives special emphasis in Management Areas 20 and 20a. More wilderness is one public demand. Therefore, 223,600 roadless acres are proposed for wilderness. Although wilderness travel

C is difficult for most disabled and elderly people, the Forest works to accommodate their needs in nonwilderness areas. Forestwide Standard Nos. 6 and 7 emphasize providing recreation activities and sites to a wide segment of society, including the handicapped and elderly.

D According to the Forest Plan, development could take place on 317,900 currently roadless acres. When evaluating areas for roadless management, timber productivity and mineral potential were considered. These lands were rated on geologic favorability for oil and gas and for hardrock minerals. Existing leases and mining claims were also considered.

Other than designated wilderness areas which have already been withdrawn from mineral entry and leasing by the Wilderness Act of 1964, all other areas on the Lolo National Forest are open and available for leasing of hydrocarbons. Access to these areas for exploration/development purposes will be allowed, subject to special conditions to mitigate site specific impacts to other resource values.

COMPOSITE PUBLIC COMMENT

SL-N-6-Brian Jameson TX-N-8-Donald Purinton WM-N-10-Craig Davis

One of these respondents was in favor of alternative f for the management of the Forest.

Two responded in support of alternative g as outlined in the Lolo National Forest Plan Revised Draft Environmental Impact Statement. A

Increasing the size of the wilderness system on the Lolo would benefit local residents as well as many out-of-State residents. B

FOREST SERVICE RESPONSE

SL-N-6 TX-N-8 WM-N-10

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 acres of wilderness and 180,700 acres for roadless management. The recommended wilderness areas are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness.

JOHN R. [illegible]
P. O. Box [illegible]
[illegible], CA [illegible]

CA-N-7

FOREST SERVICE
[illegible]

MAR 1 8 1985

RECEIVED

March [illegible]

[illegible] National Forest
[illegible]
Missoula, Montana 5980[illegible]

[illegible]

[illegible] including Rock Creek [illegible]

[illegible] Montana [illegible] wilderness, wildlife, fish, historic, cultural and [illegible]

[illegible] Endangered [illegible]

[illegible]

[illegible] Permanent Preserve [illegible]

[illegible] National Forest System [illegible]

[illegible] Wilderness [illegible] Water Resources [illegible]

[illegible] planning - management to preserve, protect, [illegible]

[illegible] National Forest [illegible] fully classified and [illegible] permanently protected as Wilderness [illegible] National Wilderness Preservation System - at This Time -

- [illegible] Wilderness Addition, [illegible] 29,105
- [illegible] Wilderness Addition, [illegible]
- [illegible] Wilderness Addition, [illegible] 25,098
- [illegible] Wilderness Addition, [illegible] 16,838
- [illegible] Wilderness Addition, [illegible] 7,995
- [illegible] 10,940
- [illegible] 14,420
- Quigg [illegible]
- [illegible] 30,665
- [illegible] 18,[illegible]
- [illegible] 5,235
- [illegible] 13,[illegible]
- [illegible] 41,660
- [illegible] 30,000
- [illegible]
- [illegible] 23,350
- [illegible] 16,435
- [illegible]
- [illegible] 14,[illegible]
- [illegible]
- [illegible] 5,[illegible]

- [illegible] 129,395
- [illegible] 63,090
- [illegible] 7,280
- [illegible] 11,270
- [illegible] 44,[illegible]
- [illegible] 10,[illegible]
- [illegible] 24,[illegible]
- [illegible]
- [illegible]
- [illegible] 9,0[illegible]
- [illegible] 6,690
- [illegible] 12,[illegible]
- [illegible] 45,[illegible]
- [illegible]
- [illegible] 1,[illegible]
- [illegible] 23,[illegible]
- [illegible] 6,[illegible]
- [illegible] 9,[illegible]
- [illegible] 5,[illegible]
- [illegible] 1,950
- [illegible]
- [illegible]

- [illegible] 137,550 acres
  - [illegible] 1,315,550 acres of Wilderness [illegible] National Forest [illegible] Wilderness Preservation System - at this time -

[illegible] Rock Creek [illegible] National [illegible] Preserve [illegible] Rock Creek [illegible]

[illegible] National Forest [illegible] Biological Preserve [illegible] grizzly [illegible] peregrine falcon, bald eagle [illegible]

[illegible] National Forest [illegible] Biological Preserve [illegible]

[illegible] Wilderness [illegible] Wildlife [illegible] Biological and Scenic Resources [illegible]

[illegible] Road [illegible] National Forest [illegible]

[illegible] Roadless Areas [illegible]

[illegible] Public Lands [illegible] Public Lands [illegible]

[illegible]

Sincerely,

D. [illegible]

FOREST SERVICE RESPONSE

CA-N-7

A The National Forests are managed under a series of laws passed by Congress. These laws date back to the 1891 Creative Act and the 1897 Organic Act. More recent legislation include the 1960 Multiple Use-Sustained Yield Act and 1976 National Forest Mangement Act. All these laws require the National Forests to be managed for multiple uses - timber, recreation, watershed, wildlife, wilderness and other uses. Dedicating the Forest as a "permanent preserve" is not the intent of Congress.

B The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

C The Rock Creek drainage receives special emphasis in Chapter IV of the Forest Plan. The Forest recognizes that Rock Creek is a Blue Ribbon trout stream and a productive fishery will be maintained. The Forest intends to manage the headwaters to provide the quantity and quality of water necessary to maintain the total Rock Creek aquatic ecosystem.

D Grizzly bear, gray wolf, peregrine falcon and bald eagle are the Threatened and Endangered species on the Forest. The goal is to recover each species to nonthreatened status. Forestwide Standard No. 24 has been designed to serve this goal. The standard states that management practices in essential habitat of Threatened and Endangered species must be compatible with the habitat needs of the species. Grizzly bear habitat will receive special emphasis in Management Areas 20 and 20a, which will apply to 98,127 acres.

WM- N-9

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name William L. Gildow

Address 2100 Petty Creek Rd
Alberton, MT 59820

Organizational Affiliation ______
______ (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

Since I live up Petty Creek Rd Areas 01809, 01202 01814, 01803 affect me.

01814 - Deep Creek - ⑨ wilderness -
01202 - Petty Mountain ⑨ wilderness
01803 - Burdette [illegible] d-e-OR f
01809 - Garden Pt. - d-e-OR -F

I Know that we have to log and take care of our forests for the animals and work for ourselves, so I'm for logging most of the time as long as its done right

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONTANA
APR - 9 1985
RECEIVED

FOREST SERVICE RESPONSE

WM-N-9

Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

The roadless areas mentioned will be managed as follows:

Deep Creek (01814) - About half of this area will be accessed for timber harvest during the next decade.

Petty Mountain (01202) - The area will remain roadless during the Plan period.

Burdette (01803) -This drainage will be managed for big game winter range with prescribed fire as the primary management tool. The same prescription applies to Lupine Creek, except for a portion at the south end of the drainage that will be harvested. This area will remain essentially roadless during the next decade. Approximately 500 of the 16,360 acres will be developed.

Garden Point (01809) - This area will be managed for timber production and developed during the next decade.

COMPOSITE PUBLIC COMMENT

M-N-11-J.R. Reynolds WM-N-363-Kirby Erickson

These two respondents expressed that the timber/wood products industry is undergoing rapid change. They do not agree with most of the above arguments for 'saving' the local wood industry, and they are in opposition to road building and logging on the Lolo National Forest. A

They feel that forest practices during the past two decades left no room for compromise as to saving all remaining roadless areas. There once was a time when, if managed correctly, Montana could have had a sustained wood products industry. Greed and lack of vision combined with poor management practices have led to the loss of that economic potential. Montana must now look towards the recreational and tourist assets of its remaining lands. Tourism and recreation are going to be the 'cash crop' that will best serve the regional economy. B

FOREST SERVICE RESPONSE

M-N-11 WM-N-363

Forest Service laws, dating back to the late nineteenth century, require the National Forests be managed for multiple uses. The goal of the Forest Plan is to blend resource demand with resource supply. When resource demands conflict, the goal of the Plan is to provide for balanced use by all users. The selection of Alternative d as the preferred alternative is based upon analysis of these demands and the capability of the land.

A Forest management requires road access for timber harvest, recreation and protection from fire, insects and disease. Forest roads and their construction can have impacts on soil, water and wildlife resources, but measures have been developed to provide protection of these resources during and after road system development. Specific descriptions of these measures can be found in the Lolo National Forest Plan, Forestwide Standard Nos. 16, 49, 50 and 52.

B The Forest recognizes the fact that recreational demand is increasing and that tourism is important to the economy of western Montana. Besides wilderness experiences, the Forest provides a wide range of roadless, motorized and developed recreation. The current capacity of developed sites exceeds expected demand for the first decade; therefore, no additional construction of facilities is planned. The Forest will encourage other agencies and private concessionaires to meet future demand.

COMPOSITE PUBLIC COMMENT

Ninety six people expressed the sentiment that if the Lolo fails to resume its timber sale level we stand to lose employment and income in an already faltering lumber industry.

The Forest is asked to reconsider the figure of 122 million board feet per year to the 160 million board feet that industry projects is needed to be able to survive.

M-N-12-Daniel Morgan   13-G.A. Diettert, M.D.   15-Gene Chappell
16-Robert Clubb   17-Hardy Johnson   18-Roger Hoffman
19-Clifton Farmer   20-John Peters, Jr.   22-Chris Rice
23-P.M. Anglin   24-Mark Nonnenmacher   26-Glen Munds
30-David Quinn   31-Del Johnson   32-Chuck Seeley
33-Bob Lamley   34-Wayne Maahs   35-Frank Sherman
36-Jim Bentley   37-Steven Hayes   38-Jon Luibrand
39-Anthony Liane   41-John Woods   42-Jon Dahlberg
43-Lorrie LaBrie   45-Bill Free   46-Allen Ransier
47-Harry Bentz, Jr.   48-Scott Campbell   49-Lawrence Whitcraft
50-Mike Depee   51-Rodney Younggren   52-Todd Metivier
53-Jim McKinley   54-Betty Glover   55-David Stephan
56-Ken Stephan   57-Allen Oster   58-Claude Allen
59-Ted Nelson   60-Ed Morse   62-David Ibey
64-Jon Strack   65-Harley Addington   66-Donna Bailey
67-Earl Privett   68-William Smith   103-Larry Teeters
104-John Anderson   105-Del Heimbigner   106-Lila & Jim Gullette
107-Pauline Bacon   108-Bud Bacon   109-Michael Bailey
110-Dana Bailey   111-J. Edmond Trudeau   112-Julie Miller
113-Alonzo Crawford   114-Twila Crawford   115-Marie Crawford
116-Michael Bailey   117-Gary Bailey   118-Rodney McCollum
119-Mike & Connie Spangler   120-Mr.&Mrs. Wm. Howard   121-Donald Rickett
122-Mr.&Mrs. Keith Vaughan   123-Mr.&Mrs. Steve Crabb   124-Mrs. Paula Reed
125-Mr.&Mrs. Wm. McLees   126-Mr.&Mrs. Joe Rickett   130-(14 signatures):
Joseph Magone   Al Meeks   Bobbi Parkin   Ed Heppe   Jack Carter   Ray Knapp
Donald Sept   Larry Buchart   Richard Parker   Adrian Schoonover   Mark Magone
Kenton Lewis   Ron Rickertt   Joe Wolff
131-William Mancini   142-Don & Donna Davis   143-Craid Claus
146-Jim Davis   147-Robert Wall   149-Louis Stemple, Jr.
354-Craig Hanson   358-N.F. LaVigne   371-Herb Nash
381-Fred Guenzler   382-Elbert Abbey   383-Glenn Brewer
384-Don Doucett   385-Howard Kirk   386-Thomas Smith
387-Jack Hummer   389-George Hart   390-Ron Bailey
391-Charles Aktepy   405-Steve Pesante
WM-I-2-Dennis Davaz   S-I-10-Schneider Oil Co.   S-I-13-Daw Forest Prods
M-I-15-Missoula White Pine Sash Co.

This answer applies to the following private individual letters:

12 13 15 16 17 18 19 20 22 23 24 26 30 31 32 33
34 35 36 37 38 39 41 42 43 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 62 64 65 66 67 68 103
104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119
120 121 122 123 124 125 126 130 131 142 143 146 147 149 354 358
371 381 382 383 384 385 386 387 389 390 391 405
WM-I-2 S-I-10 S-I-13 M-I-15

In the Proposed Action, annual volume in the first decade is projected at 122 million board feet (MMBF), including 15 MMBF unregulated. That increases to 146 MMBF (including 15 MMBF unregulated) in the second decade. From 1979 to 1985, the Lolo offered about 100 MMBF annually; however, it sold only an average of 60 MMBF per year. The Forest presently has a number of timber sales prepared, including some offered but unsold. Under present poor market conditions, this unsold volume continues to accumulate, providing the Forest the flexibility to adjust to short-term increases if more timber is demanded. If market conditions demand volumes beyond the Forest Plan projections for a 10-year period, the Forest would be required to address the problem through a Forest Plan revision. National Forest Management Act regulations outline the revision process, which includes full public involvement.

The Lolo Forest Plan responds to the existing social and economic structure of local communities. It represents a response to varied public expressions of those social and economic needs derived from public involvement. The Forest Plan is intended to offer levels of timber volume that support rather than impact base employment, income and job distribution in local communities. The Forest will attempt to respond to local community needs for timber regardless of the larger market issue. Yearly timber sale programs will be designed to accommodate local small mills to the extent possible and by offering species and volumes where they will sell on the Forest. In addition, the Forest is attempting to identify where costs can be reduced in preparing and administering sales.

The ability of the Lolo Forest to project a higher volume of timber than that displayed in the Forest Plan is limited by the nature of the resources available, utilization and technology, and public attitudes about management of other forest resources. The biological capability of the Forest to support a yearly volume such as 160 MMBF would mean a significant reduction in other resource outputs, as show in alternatives analyzed in the FEIS. If other resources are to be maintained at levels suggested by the public, increased timber volume would have to come from marginal lands where timber harvest maynot be cost effective.

WM-N-14

Carole Mackin
Rt. 2 Box 2184
Whitehall, Montana 59759
May 15, 1985

Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, Montana 59801

Dear Sir:

The following sentence appears on page IV-44 of the draft EIS:

"If roads are not built, timber cannot be economically harvested and an irretrievable loss of a resource occurs."

I am interested in understanding the line of reasoning that led to this conclusion and was unable to find it in Section N. Roads. A

Sincerely,

Carole Mackin

Carole Mackin

FOREST SERVICE
LOLO NATIONAL FOREST
MAY 16 1985
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FOREST SERVICE RESPONSE

WM-N-14

A This statement refers to the commodity value of timber for production of lumber and other wood products, as well as the generation of income, on lands suitable for timber management. In order to utilize and benefit from this value of timber, road access is generally needed. If roads are not constructed to allow for the economical harvest of timber, then the value of the timber resource can not be recovered and is lost.

The Final EIS clarifies this statement.

COMPOSITE PUBLIC COMMENT

M-N-21-Tom Breum   25-Ray Sexton 27-Bob Cannon 29-Ken Miller
40-Jeffrey Comfort 61-Gary Bartz 63-Ron Burrington

Seven people wrote letters with the similar comments regarding this region, and more importantly our community, which is dependant on the wise use of the public's forests for timber production. It has been shown through numerous studies that wildlife, recreation, water quality, etc., are compatible with the levels of timber harvests of the early 1970's. All of the local people enjoy the diverse use of our National Forest, but also need to have jobs to be able to enjoy these resources. A

The Forest Supervisor is urged to increase the annual cut to the level of the early 1970's and to provide sales which are economical for the lumber companies to buy and convert to a marketable product for the well being of our people and communities." B

FOREST SERVICE RESPONSE

M-N-21 25 27 29 40 61 63

The Proposed Forest Plan has established land management allocations for the entire Lolo Forest. The allocations establish major resource emphasis for these areas. In areas suitable for timber management, basically Management Areas (MA's) 16 and 17, the objective is to provide for healthy stands of timber and optimize timber growing potential. However, even in these areas a balance must be maintained to protect all resources. The Forest's objective is to plan timber sales in the most cost-efficient manner possible, while maintaining environmentally sound management practices.

A In the Proposed Action, annual volume in the first decade is projected at 122 million board feet (MMBF), including 15 MMBF unregulated. That is projected to increase to 146 MMBF (including 15 MMBF unregulated) in the second decade. From 1979 to 1985, the Lolo offered about 100 MMBF annually; however, it sold only an average of 60 MMBF per year. The Forest presently has a number of timber sales prepared, including some offered but unsold. Under present poor market conditions, this unsold volume continues to accumulate, providing the Forest the flexibility to adjust to short-term increases if more timber is demanded. If market conditions demand volumes beyond the Forest Plan projections for a 10-year period, the Forest would be required to address the problem through a Forest Plan revision. National Forest Management Act regulations outline the revision process, which includes full public involvement.

The Lolo Forest Plan responds to the existing social and economic structure of local communities. It represents a response to varied public expressions of those social and economic needs derived from public involvement. The Forest Plan is intended to offer levels of timber volume that support rather than impact base employment, income and job distribution in local communities. The Forest will attempt to respond to local community needs for timber regardless of the larger market issue. Yearly timber sale programs will be designed to accommodate local small mills to the extent possible and by offering species and volumes where they will sell on the Forest. In addition, the Forest is attempting to identify where costs can be reduced in preparing and administering sales.

The ability of the Lolo Forest to project a higher volume of timber than that displayed in the Forest Plan is limited by the nature of the resources available, utilization and technology, and public attitudes about management of other forest resources. The biological capability of the Forest to support a yearly volume such as 160 MMBF would mean a significant reduction in other resource outputs, as shown in alternatives analyzed in the FEIS. If other resources are to be maintained at levels suggested by the public, increased timber volume would have to come from marginal lands where timber harvest may not be cost effective.

M-N-21, 25, 27, 29
40, 61, 63

FOREST SERVICE RESPONSE CONTINUED

B The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. The Forest will continue to explore ways to cut unit costs and minimize road miles and standards without impacting or damaging other resources. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

WM-N-28

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name Don Coughren
Address PO Box 611
Bonner, Mont 59823
Organizational Affiliation ____
____ (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

As a forest products impolyee I feel that my job and future is important enough to me that I am writing this letter in hopes that you will reconder your plans to reduce the tree harvest. A

I feel the biggest impact on wildlife habitat in this area is not use of the forest for timber harvest, but the over grazing of ~~bif~~ livestock on game winter ranges B

Logging roads and areas can help the game population by giving them better grazing and also the roads (if Closed to travel after logging operations) can give game animals a larger, quicker route to travel in search of graze. C

Don Coughren

FOREST SERVICE
LOLO NATIONAL FOREST
APR 22 1985
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FOREST SERVICE RESPONSE

WM-N-28

A In the Proposed Action, annual volume in the next 10 years is expected to be 122 million board feet (MMBF), including 15 MMBF unregulated. That is projected to increase to 146 MMBF (including 15 MMBF unregulated) in the future. From 1979 to 1985, the Lolo offered about 100 MMBF annually; however, it sold only an average of 60 MMBF per year. The Forest presently has a number of timber sales prepared, including some offered but unsold. Under present poor market conditions, this unsold volume continues to accumulate, providing the Forest the flexibility to adjust to short-term increases if more timber is demanded. If market conditions demand volumes beyond the Forest Plan projections for a 10-year period, the Forest would be required to address the problem through a Forest Plan revision. National Forest Management Act regulations outline the revision process, which includes full public involvement.

B While wildlife and grazing conflicts are common in the west, most of the Lolo National Forest is steep, heavily timbered, brushy, and thus unsuitable for grazing. This includes big game winter ranges. One exception is riparian areas where grazing, fisheries and wildlife do occur. Severe grazing conflicts of this type occur on approximately 11,400 acres or .5% of the Forest.

C The relationship between timber harvest and forage for big game has been recognized in the Lolo Forest Plan. On winter range areas with a suitable timber resource (approximately 60% of the managed winter range), timber harvest is the principal tool used to increase forage production. In conjunction with this activity, roads are closed to provide security for the wintering animals.

FL-N-44

Glenn Compton
5808 Nutmeg Ave.
Sarasota, Fl. 33581

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24
Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels,

In response to the RDEIS and the proposed Lolo Forest Plan, A
in my opinion, I favor Alternative F over Alternative D as
the proposed alternative. My reasons are as follows: If the
Lolo National Forest is to protect its cultural and natural
resources, certain needs must be addressed: B
1. Establish systems to monitor changes in the parks,
and make regular reports to the threats facing the resources,
along with long term plans to deal with them. C
2. Increase scientific research in the area of
conservation of natural resources. D
3. Acquire more land into the Forest.
4. Preservation and conservation of natural resources E
should be a top priority.
5. The Forest should be managed in such a way as F
to emphasize wildlife habitat, improve watershed conditions,
protect and improve physical and biological characteristics
of the Forest, maintains or enhances aquatic ecosystems and
riparian systems, improves water quality, fisheries, wildlife
habitat, and visual quality.
Alternative F seems to address those needs which I
feel are important to the future management of the Forest and
therefore I fully support the implementation of Alternative
F as the proposed alternative.

Yours truly,

Glenn Compton

Please note change of address
Old address
5812 Nutmeg #6
Sarasota, FL
33581

FOREST SERVICE
MAY 14 1985
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FOREST SERVICE RESPONSE

FL-N-44

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of rescurce values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B A good monitoring plan has been developed. Also monitoring needs are planned and implemented according to the level of development actvities planned for a given year. The monitoring program does provide for data evaluation and feedback as outlined in Figure V.1, Decision Flow Diagram in Chapter V of the Lolo National Forest Plan.

C The research needs to fully implement the Forest Plan are included in Section C, Chapter II of the Forest Plan. Several research projects with similar needs are being conducted within the Lolo Forest or on similar Forest lands around the Region. The Forest Service concurs that research should be aggressively pursued and, where information on the effects of forest management is lacking, a cautious approach is necessary.

D Appendix I details the guidelines for the proposed program of landownership adjustment on the Lolo.

E The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

The Lolo concurs that conservation of natural resources is a top priority in Forest management. A variety of measures in the Forest Plan addresses that issue, including the Forestwide Standards discussed below.

F Forestwide Standard Nos. 15-20 show what steps will be taken to protect the water quality of the Lolo. These Standards will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. The Forest will also work with private landowners to protect watersheds by following Forestwide Standard No. 14.

Forestwide Standard Nos. 21-28 deal with protection of wildlife features and habitat. Included in these Standards are protection of wallows, mineral licks and seeps, management of threatened and endangered species for recovery to nonthreatened status and management practices "...designed to have a minimum impact on the acquatic ecosystem...."

WM-N-69

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONTANA

MAY 24 1985

RECEIVED

LOLO FOREST PLAN COMMENTS

Dear Mr. Daniels:

I support Alternative B because of its management philosophy, old growth habitat allocations, visual quality maintainence, protection of aquatic habitat and riparian zones, relatively low level of road building, wilderness and roadless allocations, and the recreational opportunites it provides. This alternative also provides a good balance of timber and other market resources to maintain employment and provides the same economic return as the proposed action. However, the following changes should be made to improve the alternative. A

(1) Recommend Stony Mountain and Lolo Peak for Wilderness; adopt Montana Wildlands Coalition boundaries for Swan Front and Great Burn Wilderness recommendations; add area allocated to roadless along Monture Creek to Monture Creek Wilderness recommndation; and recommend Wilderness for Cube Iron/Silcox as proposed by MWC. B

(2) Allocate all of Marshall Peak roadless area to roadless management. C

(3) Change Alternative D allocation in McGregor-Thompson, Pat Knob-N. Cutoff, S. Siegel-S. Cutoff, and N. Siegel areas from roadless to wildlife management emphasis. These changes will offset impact of recommendations in (1) and (2) above on non-roadless allocations. These areas should be used primarily for wildlife management emphasis, particularly elk winter range where appropriate. D

(4) Roadless areas management prescriptions should require No Surface Occupancy stipulations for all new and re-issued mineral leases. E

(5) Firewood cutting should be prohibited in old growth management areas; seasonal road closures should be used to insure that unpermitted cutting does not happen. A minimum rotation age of 200 years should be standard. F

(6) A reliable, well-funded monitoring program should be in place before development proceeds. Such a program should use automatic feedback to curtail development activities if funding for monitoring and/or mitigation is inadequate. Monitoring must be timely, at least annually, and evaluated promptly. Levels of acceptable change should be scientifically documented. G Where research is lacking, it should be aggressively pursued and until such research data are available, applied resources activities whose impacts are uncertain should be scaled back. H

(7) To the greatest extent possible, avoidance rather than mitigation of environmental impacts should be practiced. I

(8) Sediment yields are too high. Tractor skidding should be prohibited on slopes greater than 40% and the level of roading should be reduced. J

(9) In general, recreational values are underestimated and timber values inflated. This should be corrected. K

Name Roger W. Lewis
Address 308 Doran Lane

FOREST SERVICE RESPONSE

WM-N-69 70-79 80-89 90-98 355 359 362 365 368 374-377 379 401 404-406 407

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B The Draft EIS reviewed 776,190 acres of roadless land. The Forest recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

A portion of Lolo Creek, including Lolo Peak, is recommended for wilderness designation. This is a change from the draft statement.

On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres respectively for the Lolo Forest.

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

C The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

D The management emphasis for the Pat's Knob-Cutoff and Siegel Creek areas is enhancement of wildlife, particularly big game winter range. The emphasis for the McGregor-Thompson area is management of timber and range.

E In Mountain States Legal Foundation v. Watt (1980), Federal Judge Bremmer declared that the Forest Service may not arbitrarily put blanket NSO (no surface occupancy) stipulations on roadless lands. During the formation of the Forestwide environmental assessment (EA) for oil and gas leasing, the Lolo resource specialists identified a number of special stipulations which would be added to leases issued in roadless areas to protect/mitigate any impacts. This listing of stipulations is included in MA 11 as part of the direction for managing the Forest's roadless lands.

F Firewood cutting in designated old growth areas is not considered a problem since these areas generally will not be accessible by road. Lands assigned for old growth management are scheduled on a double rotation basis. Depending upon the site productivity, the rotation period is currently established at 170 to 190 years. The primary function of old growth, however, is to produce an ecological condition, not necessarily any specific age.

69-Roger W. Lewis
70-Mark F. Rotar
71-Mary Ann Burns
72-Mrs. J. Sullivan
73-Joan M. Birch
74-Peyton Moncure
75-Don Nisewanger
76-Samuel A. Reid
77-Bonnie Lirf
78-Edward Foss
79-Derrill Jones
80-Rachel Glazer
81-John/Sally Trauscht
82-Janet Allison
83-David Ryan
84-Leo P. Joron
85-Reuel G. Janson
86-Loreen C. Folsom
87-Laurie Hunter
88-Edward Monnig
89-Andy Smith
90-Tennie Yoder
91-George Dickman
92-David Cole
93-C. Hamburger
94-Sara Toubmay Jones
95-Jonah Freedman
96-Robert H. Combs
97-Paul Snyder
98-Douglas Webber
355-Carla Rister
359-R. Kenneth Stolz
362-Paul M. Zenk
365-Bruce Wielinga
368-Lisa Bossert
374-Kevin O'Brien
375-Jeri Ottinger
376-Dustin R. Owens
377-Michael L. Raymond
379-Dexter M. Roberts
401-Harry H. Cloke
404-Rev. John Ward
405-Steve Pesante
406-Warren/Pat Little
407-Dan McCaffery

G A good monitoring plan has been developed. Also monitoring needs are planned and implemented according to the level of development actvities planned for a given year. The monitoring program does provide for data evaluation and feedback as outlined in Figure V.1, Decision Flow Diagram, in Chapter V, Section D, Lolo National Forest Plan.

H The research needs to fully implement the Forest Plan are included in Chapter II, Section C. Several research projects with similar needs are being conducted within the Lolo Forest or on similar Forest lands around the Region. The Forest Service concurs that research should be aggressively pursued and, where information on the effects of forest management is lacking, a cautious approach is necessary.

I The Forest designs projects, including roads, to avoid potential impacts and high risk situations. Mitigation measures are incorporated into projects to reduce unavoidable impacts to acceptable levels.

J Tractor skidding on steep slopes has been an ongoing concern during the planning process. The Lolo National Forest has placed special restrictions on tractor skidding land over 35 percent. All soils are treated with mitigation measures that consider the characteristics of the soil and attempt to minimize the particular hazard of each location (Best Management Practices (BMP's)). By using this kind of approach, areas can be developed with a minimum amount of sediment production. Road closures are used to protect watershed values and help reduce sediment production. Some closures are year-long while others are only seasonal, but both do their part to ensure that the watershed is protected.

K The values per recreation visitor day (RVD) for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and the RPA program, as required by the Forest and Rangeland Renewable Resource Planning Act. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging and so forth to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

Timber values are based on actual market values for the time period 1976-81. The discount rate used in the Forest Plan is based on well-documented research concerning the real rate of return on low-risk, long-term investments. Sale-by-sale economic analysis is called for as part of the implementation of the Forest Plan. Monitoring of economic assumptions, particularly price trends, is also an important part of implementation and significant deviation from assumptions would trigger the need for a change in the Plan. The inability of the Forest to sell sales in recent years is considered to be a result of recession in the national economy rather than an indication of lower timber values.

Dear Mr. Daniels:

In regard to the plan for the future management of the Lolo National Forest, I support:

(1) No degradation of existing water quality in tributaries of the Clark Fork, Blackfoot, Bitterroot Rivers and Rock Creek, A

(2) No reduction in old growth-dependent wildlife and birds, B

(3) A freeze on current road mileage of 5100 miles to protect remaining roadless elk habitat, fisheries, and to prevent the spread of spotted knapweed. C

Conservation of the following wild public lands as wilderness: D

Cube Iron-Mt. Silcox
The Great Burn (Hoodoo)
(including Cache Creek/Irish Basin)
The Rock Creek wildlands:
(Quigg Peak and Stony Mountain)
Clearwater-Monture
The Swan Front (Lolo side)
Marshall Peak

Sincerely,

FOREST SERVICE RESPONSE

99-102 150-322 397-398 412-419 421-424 427

A Forestwide Standard No. 15 commits the Forest to utilizing the best management practices to "...assure that water quality is maintained at a level that is adequate for the protection and use of the National Forest and that meets or exceeds Federal and State standards." In addition, the introduction to Forest Plan Chapter IV. Rock Creek states, "The Rock Creek drainage is an outstanding fishery and recreation resource, and these values will be maintained" (Forest Plan Chapter IV, page 1). Plan Chapter IV recognizes that Rock Creek is classified as a Blue Ribbon Trout Stream, and says the Forest "intends to manage the headlands to provide the quantity and quality of water necessary to maintain the total Rock Creek aquatic ecosystem."

B In the Lolo's issue analysis phase of planning, it was determined that the public had strong feelings about maintaining viable populations of all species of wildlife, including old growth-dependent wildlife. Few individuals, however, expressed an interest in maintaining existing levels of old growth-dependent species. The cost of maintaining existing levels of old growth would have involved reductions in big game populations, timber harvest-related jobs and dispersed recreation. Viable populations, on the other hand, can be maintained with a minimal impact on other resource outputs. For this reason, all alternatives have provisions for maintaining viable populations of old growth-dependent wildlife.

C Although a large increase in miles of road is projected, the number of miles of roads open for use will increase only slightly. By closing roads, the Forest Service plans to mitigate much of the potential impact on elk habitat, i.e., security.

Roads do provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time, noxious weeds are being found in Wildernesses or other undisturbed sites. The basic problem in noxious weed management is a lack of a good understanding of the autecological attributes of them or the synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work done todate has been related to cereal crop and range or pasture land control with limited emphasis on understanding the basic life cycle of the plant.

While herbicide use may occur under special conditions, the topography and vegetation cover on the Lolo make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot and Flathead forests. Preliminary results of the study suggest a number of management practices that may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious

99-Joanna Hemmat
102-Eric Davis
152-Diane Olhoeft
155-Douglas L. Forrest
158-Tina Moore
161-Ron Canter
164-Eloise Sagmiller
167-Tom Benevente
170-Heidi C. Johnson
173-Kathleen F. Smith
176-Janine Bradway
179-Andrew C. Maling
182-Betty Graham
185-Karl Hallman
188-Mike Nelson
191-Katie Hogan
194-Stephen Harqvail
197-Kim Sherwood
200-Ann Tracy
203-Jackie Avesden
206-Ron White
209-Sarah Myslis
212-Josh Slotnick
215-John Polisar
218-Eugene Debs
221-Charlene Nelson
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227-M. Steven Nadeau
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254-Pat Gallus
257-David Bassler
260-Melody Perkins
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269-Carol Lynch
272-Barry Sunte
275-Chris Monyer
278-R.G. McCready
281-Robyn Lamoreaux
284-James Menakis
287-Michael L. Slesert
290-Susan Forman
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296-Richard Tevesque
299-Patrick McCormick
302-Sarah L. Greene
305-John J. Hamm
308-Tom Crawford
311-Gary Ray
314-Abbott L. Norris
317-Steve Loken
320-Jim Stammers
397-Susan Miles Bryan
413-Warren Michelson
416-Dana L.Douceth
419-C. Pruitt
423-Ron G. Visus

100-Timothy Speyer
150-[illegible] Bakeberg
153-John Franior
156-Marilyn Schafer
159-Rebecca Ley
162-John Goldsmith
165-Marc McLaney
168-Margarita Dritshular
171-Terry A. Shovilin
174-Jacqueline Rhodes
177-Linda Rosientz
180-Jerry Matthews
183-Frank Joseph
186-Joanne M. Sulton
189-Gerald McCarthy
192-Patrick J. Wood
195-Scott Timberman
198-Heather Todd
201-Tim Plenger
204-V.S. Van Sickle
207-Ann Marie Chytra
210-Loren Pinski
213-Sara L. McClellan
216-Lory Felker
219-Dean Holmquist
222-Selena Coffey
225-Pat Scharfe
228-Lori Johnson
231-Jennifer Scholes
234-Rebecca S. Gray
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240-Daniel Cham
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246-Mary Cole
249-Richard Torre
252-Jeff Folsom
255-Michelle Banco
258-Linda C. Jones
261-Susan C. Walker
264-Laura Landeur
267-Wayne Theuchel
270-Randy Bornigor
273-Rose Ann C. Wastjer
276-Paula Shulman
279-Anne Hamilton
282-Julie Fosbender
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288-Margaret Miller
291-Sharon A. Myers
294-Daniel Henwood
297-Steve Howe
300-Stephan Dicomitis
303-Tom Morarre
306-Joe Moran
309-Stve Hathaker
312-Robert l. Sexton
315-Jacky Norris
318-John Oralle
321-Lynn M. Price
398-Bill Bishop
414-Tamara R. Black
417-Florence Chissin
421-Stephen M. Elfelt
424-Wes Woodgard

101-Dana McMurray
151-W.M. Rainbolt
154-Ken Bonder
157-Nick Hammer
160-Mary R. Siama
163-Sharon Dickinson
166-Lucinda Hemry
169-Kelly Fullmer
172-Paul R. Smith
175-Bill Felton
178-Robin Thornell
181-Suzanne Roullier
184-Scott McLeod
187-Cheye Ann Butler
190-Jeff Shezzie
193-Stuart Howell
196-Randy Scott
199-Cindy Burkhardt
202-Colleen Harrington
205-George R. Smederson
208-Tim Beck
211-Diane Bechard
214-Betsey Hurd
217-Melanie Myllymaki
220-Nancy Fay
223-Robert S. Muslis
226-David J. Plummer
229-V. [illegible]
232-Lynn D. Eck
235-Patrick G. Andre
238-Judy Smith
241-Gary Clair
244-David Rye
247-Grant Wiegert
250-Chris Hoff
253-K. O'Connor
256-Dave Christensen
259-Tracy Moore
262-Elizabeth N. Demoney
265-Heidi Hurt
268-Paul Montgomery
271-Matt Thomas
274-Michael J. Craig
277-Michelle Olson
280-Chuck Guy
283-Ron Stirtius
286-Rick Lyan
289-Brian G. Steicher
292-Linda Weasel Head
295-Monte Garrett
298-James Curley
301-Siri Albin
304-Linda Arland
307-Suzanne Reid
310-Shannon Finch
313-Higby Tippleson
316-Lynne Dickman
319-James B. Wheeler
322-Doris Milner
412-Pat McCoy
415-David W. Mitchell
418-Steve McCoy
422-Terri Brannell
427-Tim/Barb Peterson

FOREST SERVICE RESPONSE CONTINUED

weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.

D The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

The Final EIS (FEIS) does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000) will remain roadless within the next 10 years.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

WM-N-127

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA
MAY 28 1985
RECEIVED

May 25, 1985

Orville L. Daniels, Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, MT 59801

Dear Orville:

Please accept this letter as my personal comment on the revised draft
EIS and Forest Plan for the Lolo National Forest. I have quickly
reviewed the proposed plan but my comments are mostly based on my
on-the-ground familiarity with much of the Lolo Forest wildlands
during the past 20+ years. In that this is the third time around with
a draft Lolo Forest Plan I must first commend you and your staff for
your continued dedication and hard work. I know that the burn out
factor can be very real with seemingly endless planning processes.

Although you would not expect to receive the following comment from
me I want to express my desire that the Lolo Forest continue to meet
the needs of the local timber industry with its historic 60 to 80 MMBF
per year harvest. Despite inevitable up and down cycles in the timber — A
industry the long-term health of this industry is vital to the social
and economic fabric of western Montana and I sincerely want to see
this continue. I am convinced that with improved utilization combined
with more intensive, cost effective management of the more productive
and generally already accessed portions of the Lolo Forest we can
maintain the Forest Products Industry while saving the best of the
last of our wilderness heritage on the Lolo Forest.

At present only 6% of the Lolo Forest is in the National Wilderness
System compared with a 20% average on the national forests in Montana.
The revised draft plan makes a modest but solid step to correct this
imbalance by proposing 27% of the unprotected Lolo Forest roadless
acreage--some 211,930 acres-to be added to the Wilderness System. In
addition to these recommendations I urge you to support the Conserva-
tionist '85 Wilderness proposal for the Lolo Forest which calls for
Wilderness designation of 37.7% of the remaining roadless acreage; or — B
about 291,490 acres. Even if all of the Conservationist Wilderness
recommendations for the Lolo are implemented only 18% of the Forest
would be included in our Nation's Wilderness System--a percentage that
would still be lower than the State average!

Specifically, the following additions should be made in the Lolo
Forest wilderness recommendations:

1) Great Burn--add the wild and beautiful Cache Creek/Irish Basin
drainage to the Wilderness proposal to protect the integrity of the
Bitterroot Divide and surrounding wildlands. This would make for a — B
much more manageable boundary by connecting the north and south
segments of the Great Burn into a single magnificent Wilderness.
Peripheral timber management areas along the northern and eastern
edges of the Great Burn should be removed from the timber base as
these lands are marginal for timber but extremely valuable as wildlife — C
security areas adjacent to the heavily roaded and logged lands.
2) Cube Iron-Silcox--this rugged and highly scenic subalpine roadless
area is highly suitable as Wilderness. Timber and mineral conflicts
are negligeable. Continued encroachment into the area by roads has
reduced it in size to where the mountain goats in the lake basins are — D
threatened. There are verified reports of occasional grizzly bears in
the area. I urge Forest Service support for the modified 36,000 acre
Wilderness boundary which provides room for wood cutting along the SW

FOREST SERVICE RESPONSE

WM-N-127

A During the period from 1979 to 1984, the Forest offered 100 MMBF of timber annually; however, it only sold an average of 60 MMBF. In response to current demand, the 1985 sale program was adjusted to 80 MMBF. As market conditions improve, the volume offered can increase to the Plan's estimated decade volume of 122 MMBF.

B The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (including the Irish Basin/lower Cache Creek area) and wilderness additions to the Selway/Bitterroot and Scapegoat. In addition, 180,700 acres are designated for roadless management.

C Concerning peripheral timber management areas along the northern and eastern edges of the Great Burn, only lands determined to be economically feasible to produce and harvest timber on are retained in the suitable land base.

D The Forest does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management.

WM-N-127 p.2

corner.

3) Monture Creek--I support and commend the Forest Service wilderness recommendation for this highly suitable addition to the Bob Marshall Wilderness complex. This important addition will help secure the local outfitting industry while safeguarding the southern sections of the Bob, such as Danaher Basin.

4) Sheep Mtn/State Line--about 10,000 acres of the Bitterroot Divide roadless area have been lost to development during the past five years. I urge you to draw the line where it now is and to recommend the remaining 30,400 acres of roadless country as wilderness. The significance of this area as Wilderness is augmented by the fact that it is part of a much larger roadless resource that extends into Idaho. E

5) Lolo Creek addition to the Selway-Bitterroot Wilderness--I urge your support and adoption of the compromise 3,590 acre Lolo Creek addition. The adjusted boundary for this scenic northern extension has been carefully worked out on the ground by the various interests and deserves agency recognition. This addition, small as it is, stands out as a good example of genuine cooperation among competing interests. F

6) Rock Creek watershed--I commend the Lolo for standing firm on its 60,830 acre Quigg Peak Wilderness proposal. In order to assure the long-term protection of the Rock Creek watershed I further urge your support of the proposed Stony Mountain wilderness to the SW. About 33,120 acres of this proposed wilderness is on the Lolo Forest; all of which drains into Rock Creek. According to the plan there are few use and user conflicts with wilderness and the proposed management is fully compatible with wilderness. Wilderness management of this area would protect the paramount watershed values of this headwaters country as well as the outstanding big game summer ranges along the crest of the Sapphire Divide. G

I further recommend that all of the Lolo Forest lands in the Burdette and Lupine Creek drainages be removed from the suitable timber base because of the need to protect elk security. I have hunted both of these wild drainages off and on during the past 22 years and I know firsthand how vital they are as escape cover for elk and other wildlife during the hunting season. H

As landowners in the Mill Creek drainage north of Frenchtown my family is vitally concerned that the watershed be properly managed to protect the scenic, wildlife and watershed values of the area. I With heavy logging occurring on the intermingled private sections the adjacent national forest lands must be managed with a special degree of sensitivity to maintain these values. I've noticed increased sedimentation and turbidity in Mill Creek where it enters our property at the mouth of the Mill Creek canyon with a marked reduction in the native cutthroat trout fishery. Now, only brown trout seem to be able to survive in Mill Creek below the forest boundary.

On a final note, I recommend reform of the current practice of using capital investment funds to construct roads into roadless areas for below cost timber sales. In so doing, marginal lands should be removed from the timber base. J

Thanks for considering my comments and please keep me advised of your progress in the formulation of a final Forest Plan for the Lolo.

Sincerely,

Bill Cunningham

Bill Cunningham
1027 N. Jackson
Helena, MT 59601

FOREST SERVICE RESPONSE CONTINUED

E The Sheep Mountain State Line area is not recommended for wilderness.

F A portion of Lolo Creek (01805) is recommended for wilderness designation, which is a change from the Draft statement.

G In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

H The entire Burdette Creek drainage is to be managed as big game winter range with prescribed fire specified as the sole manipulative option. The area is classified as unsuitable for timber harvest. The majority of the Lupine Creek drainage is equally designated, although a portion of the south end of the drainage, outside the winter range, is to provide for timber harvest. The Lolo recognizes the sensitivity of this area for big game security; however, based on the existing cover conditions in this portion of the drainage, it is felt that security can be maintained by careful attention to cover-forage ratios and road management at the project level.

I The Lolo has no long-term water quality or fisheries habitat or population data on Mill Creek. Most of the National Forest land in Mill Creek has been traded to Burlington Northern for lands in the Rattlesnake National Recreation Area and Wilderness. The remaining lands in Mill Creek will be considered for future exchanges.

In some cases, particularly during the initial sale entry into an unroaded area, the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. This applies to roads funded with both capital investment and purchaser credits.

WM-N-128

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

May 28, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONTANA
MAY 29 1985
RECEIVED

Name Rex Lincoln
Address Box W
Hauran, Mont. 59842
Organizational Affiliation
Self (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

Dear Sir;

I have several points to list relevant to Area 01790. I must go on record favoring Alternative G for Mt. Bushnell country. A

Lookout Pass on Interstate 90 is the largest entry and exit point in the State of Montana. Travelers entering or exiting Montana are treated to mini-Glacier Park scenery. Montana people and the powers to be have just recently recognized the strength and cleanliness of the tourist industry and its long-term dollar turn-over.

This is not a one-time, one-crop, one-decade or five decade industry. This industry is forever. Areas like 01790 that get more people exposure to what Montana is more than Glacier or Yellowstone Park must be preserved.

Even though most of these people will never set foot on the CC DIVIDE, 01790 should be set aside to prove to any doubters that there are places left that are not just story-book tales. B

The great BPA powerline sweep along the southern boundary and the powerline along the western boundary and the pipeline on the northern boundary are all public notices of the closing in of man on this private piece of the world. Area 01790 is well defined.

Each of the alternatives lays too much emphasis in the potential infestation of the mountain pine beetle. Lots of people seem to be afflicted with a cancer attitude. They want to cut down the lodgepole before the disease is diagnosed. You cannot remove the heart and soul of a person before a thorough diagnosis and study. We can legislate and deal with the bug threat if the short-term interference with nature is justified. C

Building more logging roads into this system would be a blatant example of rubbing people's noses in the defecation of the people who believe in negative profit timber selling. Leaving 8% of something alone is much better than having less than 8% when you are finished. D

FOREST SERVICE RESPONSE

WM-N-128

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land. Alternative d provides for the enhancement of resource such as wildlife habitat, on wilderness and roadless lands as well as on lands that will be developed. Lands harvested for timber will also be managed to meet other resource goals.

B Mount Bushnell is not recommended for wilderness in the Final EIS. Land use assignments for this area recognize its visual sensitivity as well as other resource values for wildlife, riparian areas and timber.

The Lolo is working to increase opportunities on the Forest for tourism, especially in conjunction with the private sector. Lookout Pass has been given high visual sensitivity because of both the Interstate and trail use, as well as the ski area.

C The mountain pine beetle has proven to be a predictable insect. Extensive research has been done on how this insect develops, its needs and the extent of damage that can be expected when it attacks an area. Timber becomes high risk to mountain pine beetle attack in an area of extensive lodgepole pine, and it will ultimately be attacked. By knowing the stand conditions ahead of time, stands can be treated to reduce the impacts of mountain pine beetle when they do attack an area. Since so much of the Lolo contains lodgepole pine and with the epidemic in the McGregor-Thompson area, the Lolo is concerned about future management of lodgepole pine. Harvesting green timber will be much more profitable than harvesting dead trees.

D The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

WM-N-128
p. 2

Lincoln's Silver $ Bar & Gift Shop

GIFTS
NOVELTIES
SOUVENIRS
BEER
MIXED DRINKS

Highway 10
HAUGAN, MONTANA 59842

Located in the Heart of
Western Montana's
Scenic Outdoors

-2-

It is mandatory to let the sawmills and loggers have time to get their mistakes of the early 1980's paid off before opening up and selling any more of the crop. Something that takes 100 years to grow and 10 minutes to saw down can be allowed some additional wilderness time.

Recreation is here to stay. Whether you are riding a wheel-chair, a saddle horse, or on foot as you head toward Mt. Bushnell you and everyone can enjoy this wilderness.

Thank you very much,

Rex Lincoln

Rex K. Lincoln

Lincoln's

10,000 Silver $ Bar
GIFT SHOP - RESTAURANT

REX K. LINCOLN
(406) 678-4242

EXIT 16 - INTERSTATE 90
HAUGAN MONTANA 59842

WM-N-129

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 29 1985
RECEIVED

5/28/85

Dear Sir:

I am writing concerning the proposed Lolo National Forest Plan. Generally I will say that I oppose a dramatic increase of roading on the Lolo Forest. More roads will only impact elk habitat (A) and fisheries, and the roading costs will be a tremendous tax subsidy. (B)

Several specific comments concerning unprotected wildlands on your Forest:

① Keep the Great Burn whole & include the Cache Creek / Irish Basin. (C)

② Cancel plans for logging Cube Iron-Mt. Silcox, and support the citizen proposal to conserve a 40,000 acre wilderness. (D)

③ Recommend wilderness protection for the Stony Mountain area including the Quigg Peak recommendation. (E)

Thankyou for the opportunity to comment.

Sincerely,
Robert Oset

FOREST SERVICE RESPONSE

WM-N-129

A Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

B In some cases, particularly the initial sale entry into an unroaded area, the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. This applies to roads funded with both capital investment and purchaser credits.

C The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

D The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

E In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

WM-N-132

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 29 1985
RECEIVED

1426 Hamilton Heights Rd.
Corvallis, MT 59828

May 27, 1985

Dear Mr. Daniels:

My family and I have enjoyed fishing and hiking in the Lolo Forest as well as the Bitterroot. I write to express my support for Alternative B in the Forest Plan.]A

I would also ask you to include Stony Mountain and Lolo Peak inthe wilderness classification.]B

I hope you will continue to give high priority to wildlife, wilderness, and watershed values.

Thank you.

Sincerely,

R. Robison
Roger Robison

FOREST SERVICE RESPONSE

WM-N-132

A The selected alternative, Alternative d, provides a good mix of resource values enhancing both wilderness/roadless and lands determined to be suitable for timber production. The selection of Alternative d as the preferred alternative is based on analysis to best meet the resource needs of the public while also considering the capabilities of the Lolo National Forest to provide goods and services.

B A portion of Lolo Creek (01805) is recommended for wilderness designation. This is a change from the draft statement.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

CA-N-133

FOREST SERVICE
LOLO NATIONAL
MISSOULA
MAY 29 1985
RECEIVED

Norman Johnson
315 W. 3rd St, #509
Long Beach, CA 90802

May 23, 1985

The Supervisor
Lolo National Forest
3201 Spurgin Road
Missoula, Montana 59801

Dear Sir,

I have examined your fat DEIS and your revised DEIS and your review of Economic Aspects. You and your boys have been applying yourselves, for sure. Congrats.

Now, I am aware that you have to plan for mulitple use of the Forest. But it does strike me that what with cutting down the trees, mining activities, roads, destruction of wildlife habitats, the gunmen who are allowed to kill for "sport", pollution of the streams, human overuse and the like, there will be in time little of the Forest left to show us what the natural order here in the West was like. Further, and perhaps deadliest of all, there are the ever increasing human population pressures on you and on the Forest that should be anticipated in your plans. A

Right now it is the Grizzly Bear that appears to be the most threatened. For his habitat is being subjected to all the above "developments", and you do not ensure his continued wellbeing. Your message is: We can't arrest "progress" for the sake of a few Bears. Bad. It means the eventual destruction of the Grizzly as a species. B

I would like to see the Lolo joined with the Bitterroot and Deerlodge and with the Forests in adjoining Idaho. Then, hopefully, a large carving could be made out of these that would ensure the survival of the endangered Grizzly Bear. C

I would appreciate your comments.

Concerned citizen,

Norman Johnson

FOREST SERVICE RESPONSE

CA-N-133

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B Coordination for management of the grizzly bear is by an Interagency Grizzly Bear Committee which includes Federal and State agency officials responsible for management. One action by the committee has been the design of interagency guidelines which dictate the coordination that will occur in management of the grizzly bear and its habitat.

C National Forests have been established by Congress as administrative units. Sometimes, these have been combined to reduce costs or increase efficiency. Currently, there are no plans to combine any of the Forests mentioned.

WM-N-134
P.O. Box 845
BOZEMAN MT 59715
5/27/85

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MT
MAY 29 1985
RECEIVED

Forest Supervisor
Lolo National Forest
Bldg. 24 Fort Missoula

Dear Orville,

I am writing to urge you to cancel the planned A
logging of the Cube Iron-Mt. Silcox area. I support designating
this area as wilderness.

I realize that you are under pressure to get out the
maximum allowable cut, but the Cabinet Lake Backcountry
is an outstanding area that should remain wild. I am B
aware that the Administration's public resource policies have
provided more funds than ever to support timber sales and
road building, but we must keep the multiple uses
balanced. Having worked for the Lolo N.F. last year, I
know that even among forest service field personnel there
is much dismay over the road building and timber C
sales when there is an obvious lack of demand for
the timber.

I oppose the Draft Plan's dramatic increase of roading D
on the Lolo. I support including Stony Mountain in the E
proposed Quigg Peak wilderness area, and also encourage F
including the Cache Creek / Irish Basin into the proposed Great
Burn wilderness area.

Sincerely,
Don B Jackson

FOREST SERVICE RESPONSE

WM-N-134

A The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years. The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. The recommended wilderness areas are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot and Scapegoat wildernesses. In addition, 180,700 acres are designated for roadless management.

B Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land. Alternative d provides for the enhancement of resource such as wildlife habitat, on wilderness and roadless lands as well as on lands that will be developed. Lands harvested for timber will also be managed to meet other resource goals.

C The reduced demand for Forest Service timber sales in recent years is considered to be a result of recession in the national economy rather than an indication of long-term market demand. As market conditions improve and timber reserves on private lands become depleted, the volume of offered timber sold and harvested on the Forest will increase.

D Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

E In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

F In the Great Burn/Hoodoo area, the Irish Basin-Cache Creek addition is being recommended for wilderness in the Final EIS.

WA - N - 135

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONT.
MAY 29 1985
RECEIVED

May 28, 1985

Forest Supervisor
Lolo National Forest
Building 24 Fort Missoula
Missoula, MT 59801

Dear Sir:

The purpose of my letter is to express my concerns over the Lolo National Forest plan as it pertains to Irish Basin and Cache Creek. This approximate 15,000 acres should be included in a wilderness status, as it is of utmost importance in the protecting of both sides of the divide as it pertains to fisheries and big game habitat.

Yours truly,

Dean A. Lydig
Rt 5 Box 450
Spokane, WA 99208

WA-N-135

The Irish Basin-Cache Creek area is recommended for wilderness in the Final EIS.

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 29 1985
RECEIVED

Bldg 24 Ft. Msla

Sewell Interiors, Inc.
Jan Houston Sewell

4516 N. Versailles
Dallas, Texas 75205

526-3024
521-0831

WM-N-136

Mr. Daniels,

I support alternative B, but with the following changes; A

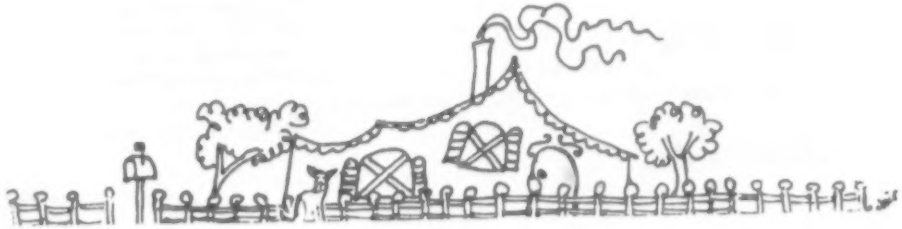
1) Stony Mtn and Lolo Peak should be recommended for wilderness. Use Wildlands Coalition boundaries for Swan Front and Great Burn. Do not slice the Great Burn, include Irish Basin. Marshall mtn entirely should have roadless management. The Welcome Creek addition must be recommended. B

Sediment yeilds should be reduced. Tractor skidding should not occur on slope over 40%. The standards and mileage of all new roads should be reduced. C

Recreational values should receive more emphasis, D

Thanks
Tom R Sewell

Tom R Sewell
5131 Koch Lane
Florence, MT.
59833



FOREST SERVICE RESPONSE

WM-N-136

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land. Alternative d provides for the enhancement of resource such as wildlife habitat, on wilderness and roadless lands as well as on lands that will be developed. Lands harvested for timber will also be managed to meet other resource goals.

B In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

In the Swan Front area, 3,690 acres are recommended for wilderness on the Lolo.

The Great Burn/Hoodoo, including the Irish Basin-Lower Cache Creek area, is recommended for wilderness in the Final EIS.

The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

Welcome Creek Addition, 01806, is not recommended for wilderness. It will remain roadless during the next 10 years.

Forestwide Standard Nos. 14 through 20 outline measures that will be taken to minimize sediment yields and maintain water quality on the Lolo.

Tractor skidding on steep slopes has been an ongoing concern during the planning process. All soils are treated with measures that consider the characteristics of the soil and attempt to minimize the particular hazard of each location. By using this kind of approach, areas can be developed with a minimum of sediment production.

C Forestwide Standard No. 49 addresses minimizing road mileage and design standards while still meeting safety, user and resource needs.

D The Forest recognizes the fact that recreational demand is increasing and that tourism is important to the economy of western Montana. Besides wilderness experiences, the Forest provides a wide range of roadless, motorized and developed recreation. The current capacity of developed sites exceeds expected demand for the next decade; therefore, no additional construction of facilities is planned. The Forest will encourage other agencies and private concessionaires to meet future demand.

WM-N-137
(1 of 3)

FOREST SERVICE
MAY 30 1985
RECEIVED

MAY 22, 1985

MR ORVILLE L. DANIELS
FOREST SUPERVISOR
LOLO NATIONAL FOREST
BLDG. 24, FORT MISSOULA
MISSOULA, MONTANA 59801

DEAR MR. DANIELS,

I WISH TO COMMENT ON THE PROPOSED LOLO NATIONAL FOREST PLAN.

1 MY INTEREST AND BACKGROUND.

CHARLES M. HACKLEY - B.S. IN FORESTRY FROM UTAH STATE UNIVERSITY IN 1963. FIVE YEARS AS A FORESTER FOR THE U.S. FOREST SERVICE.

PRESENTLY A LAND OWNER ADJACENT TO THE LOLO NATIONAL FOREST ON THE NINE MILE RANGER DISTRICT.

OWNER AND PRESIDENT OF A MULTIMILLION DOLLAR, INTERNATIONAL CORPORATION BASED IN MISSOULA MONTANA.

A CONCERNED CITIZEN WITH A FAMILY OF FIVE SONS AND A DAUGHTER. SERVING WITH THE AMERICAN RED CROSS, AND THE FINANCE CHAIRMAN OF THE MULLAN TRAIL DISTRICT OF THE BOY SCOUTS OF AMERICA.

2 COMMENTS ON PROPOSED PLAN.

OVER-ALL THE PLAN IS AN EXCELLENT PIECE OF WORK. I ONLY REGRET THAT IT WAS NOT DONE MANY YEARS AGO. MY EXPERIENCE, FROM BACK WHEN WE WERE DOING THE OLD MULTI-USE PLANS, IS THAT WE HAVE GONE THRU ENOUGH PLAN TYPES THAT BY NOW WE SHOULD HAVE BEEN WELL ON OUR WAY TO ACCOMPLISHING SOME REAL LONG TERM GOALS. I WOULD URGE THAT WE GET ON WITH THE IMPLEMENTATION OF THIS PLAN AND GET SOME ON-THE-GROUND MANAGEMENT DONE.

THE TIMBER MANAGEMENT IDEAS EXPLAINED TO ME, BY FOREST HAYES OF THE NINE MILE DISTRICT, ARE EXCELLENT. I GREATLY APPRECIATE THE SMALL AREA CUTS IN THE FOOTHILL TYPE TO PROTECT THE ESTHETICS, AND PROVIDE FOR DEER HABITAT.

MY MAIN AREAS OF CONCERNS ARE TO DO WITH FIRE PROTECTION, EROSION CONTROL, RECREATION USE AND WATER QUALITY PROTECTION.

WM-N-137
(2 of 3)

I NOTE FROM COMMENTS BY MR. HAYES THAT THERE IS GOING TO BE MORE USE OF FIRE AS A MANAGEMENT TOOL. I FEEL STRONGLY THAT THIS IS A REAL PROGRESSIVE APPROACH. WE DO NEED TO MINIMIZE THE FUELS THAT WE HAVE IN THE TIMBER AREAS. CONTROLED BURNING WILL DO A LOT TO PROTECT THE LAND AND HOME VALUES ADJACENT TO THE FOREST. I WOULD ENCOURAGE CONTROLED BURNING WHERE EVER POSSIBLE.

TOO MANY PEOPLE ARE USING MOTOR CYCLES AND SMALL OFF-THE-ROAD VEHICLES IN OUR FORESTS NEAR THE POPULATION CENTERS. A TREMENDOUS AMOUNT OF EROSION AND SCARING OF THE FOREST IS TAKING PLACE BECAUSE OF THIS USE. WE NEED TO EITHER DESIGNATE SPECIFIC AREAS AND TRAILS FOR THIS USE OR LIMIT IT TO THE DEVELOPED ROAD WAYS. LETS DO SOME MANAGEMENT OF THIS USE AND JUST NOT TOLERATE IT. A

MY MAJOR REASON FOR MOVING TO MONTANA SOME FIVE YEARS AGO AND BUILDING BY COMPANY HERE WAS TO GET BACK TO THE MOUNTAINS WHERE I COULD TAKE MY FAMILY AND ENJOY THE RECREATION THEY PROVIDE. TO MY UTTER AMAZEMENT AND GREAT DISSAPOINTMENT I FOUND THAT ONE CAN NO LONGER USE THE FORESTS AS WE SHOULD HAVE THE RIGHT TO. WE PLANNED AND WORKED TO SAVE UP TIME TO SPEND IN CAMPING, HUNTING AND FISHING. THEN AS WE SET OUT TIME AFTER TIME TO ENJOY THE FORESTS WE WERE TURNED BACK ALMOST AT EVERY DRAINAGE BY THOSE DAMMNDABLE LOCKED GATES!!!!!!!!!! B

I HAVE TRIED AND TRIED TO GET SOMEONE FROM THE FOREST SERVICE TO EXPLAIN TO ME WHAT IS SO SACRED ABOUT THE AREA BEHIND THOSE GATES TO NO AVAIL. THEY COUCH THEIR THOUGHTS WITH SOME WEASEL WORDED COMMENT ABOUT PROTECTING WILDLIFE. NOW THAT IS REALLY AMAZING. I HAVE A CORPORATE AIRPLANE AND DO A LOT OF FLYING. I AM CONTINUALLY AMAZED AT THE THOUSANDS AND THOUSANDS OF ACRES OF WILDLIFE HABITAT THAT WE HAVE - STILL MUCH OF IT ROADLESS. THERE IS ABSOLUTELY NO REASON TO CLOSING ANY ROADS WITH THE BELIEF THAT SOME TRAFFIC ON THEM IS GOING TO UPSET ANYTHING OR DO ANY DAMAGE THAT IS OF ANY MAGNITUDE COMPARED TO THE WHOLE. THE ONLY THING WE ARE ACCOMPLISHING IS MAGNIFYING THE PRESURE ON THE AREAS WE DO HAVE TO USE RATHER THAN SPREADING THE REACREATION USE OVER THE TOTAL AREA AVAILABLE. C

FOREST SERVICE RESPONSE

WM-N-137

A The Forest Travel Plan limits the use of off-road vehicles to trails or existing roads on National Forest lands. In some cases, e.g., Blue Mountain motorcyle trail complex, the Forest is working with a local motorcycle club to encourage more compliance: staying on trails, etc. The club also is assisting in some maintenance work and the closing of unauthorized trails, as well as the possible creation of additional trails.

B Roads are closed for a number of reasons including protection of sensitive soils, minimization of disturbance to big game, and reduction of maintenance costs. Benefits to wildlife, however, constitute the biggest share of road travel restrictions. Data collected independently from several western elk studies show conslusively that hunted elk populations react adversely to open roads. A density of 1 mile of open road per square mile will reduce potential elk use by 30%. A density of 3 miles of open road per square mile will reduce use by 60%. The Forest has tried to balance road management to maintain reasonable levels of big game and at the same time maintain desired levels of dispersed recreation. The preferred alternative maintains an open road density of about 1.1 miles of open road per square mile on those Forest acres that are roaded. While this by itself trades off some elk productivity, that will be compensated for by increased winter range productivity.

C Roads are built on National Forests for specific purposes such as logging, fire control, recreation and so forth. Controls are placed on the use of roads to protect a variety of resources. Refer to Forestwide Standards Nos. 8, 15, 48 and, specifically, 52.

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(3 of 3)

THESE ROADS, AT SOME $3[illegible]000 TO $50,000 PER MILE TO BUILD, WITH OUR TAX PAYERS MONEY OR TRADE OUT FOR RESOURSES ARE OURS TO USE! THEY ARE NOT SOME LAND MANAGERS TO SAY THAT HE CAN STOP ME FROM USING WHAT IS MINE. THIS IS THE UNITED STATES OF AMERICA, NOT SOME SOCIALISTIC, BUREAUCRATIC NATION. FREE AGENCY IS THE MOST PRIZED POSSESSION WE HAVE. IF WE ARE GOING TO SPEND MY MONEY TO BUILD THE ROADS THEN I HAVE THE RIGHT TO USE THEM TO SEE WHAT IT IS THAT THE LAND MANAGER BUILT THEM FOR AND TO USE THEM TO GET INTO MY FOREST TO ENJOY MY RESOURCES. ANOTHER THING. IF THE LAND MANAGER WOULD HAVE TAKEN THE $1000 + PER GATE FOR THE THOUSANDS OF GATES INSTALLED, AND USED THAT MONEY TO IMPROVE THE WILDLIFE HABITAT, TO STOP EROSION, TO PROVIDE BETTER CAMP GROUNDS, OR ANY OF MANY OTHER WORTHY PROJECTS GUESS HOW MUCH FURTHER AHEAD WE WOULD BE NOW? C

IN THE FOREST PLAN I WOULD EXPECT THAT THERE WOULD BE A STATEMENT TO THE EFFECT THAT "ALL GATES WILL BE REMOVED SO THAT PUBLIC ACCESS WILL BE MAXIMIZED FOR TOTAL ENJOYMENT AND USE OF NATIONAL FOREST LANDS." ENOUGH SAID?

REALIZING THAT OLD TIME GRAZING PERMITS HAVE BEEN INHERITED, I FEEL A POSITIVE APPROACH NEEDS TO BE TAKEN TO REDUCE THIS USE WHERE IT IS NOT BENEFICIAL TO FOREST RESOURSES. MOST OF OUR TIMBERED LAND IS NOT A PRODUCTIVE PLACE FOR THE TYPE OF FORAGE USED BY CATTLE AND SHEEP. TOO MUCH ABUSE IS OCCURING TO THE STREAM BOTTOMS AND MEADOWS BY OVER GRAZING. THIS IN TURN IS CREATING OUR WATER QUALITY TO DETERIORATE. I WOULD APPRECIATE SOME MORE CONCERN FOR THIS MATTER IN THE PLANS AND IN IMPLEMENTATION. D

THANK YOU FOR THIS OPPORTUNITY TO COMMENT ON THE FOREST MANAGEMENT OF OUR FORESTS. I FEEL A DEEP CONCERN FOR OUR CONTINUED PROPER USE OF THIS RESOURCE. WE MUST WORK AS A UNIT OF CITIZENS AND LAND MANAGERS TO DO THIS. YOUR PLAN MUST ALSO INCLUDE THIS FACT AND RELATIONSHIP OR WE WILL FIND A DIVIDED APPROACCH OF THE LAND MANAGERS AGAINST THE CITIZENS. WE MUST REDUCE THIS TYPE OF FEELING AND CREAT A WORKING PARTNERSHIP RELATIONSHIP. PLEASE ENCOURAGE YOUR PEOPLE TO DO THIS AND TO REMEMBER WHO THEY REALLY WORK FOR.

SINCERELY,

C M Hackley

C M HACKLEY

17100 ROMAN CREEK ROAD
FRENCHTOWN, MONTANA 59834

VI-194

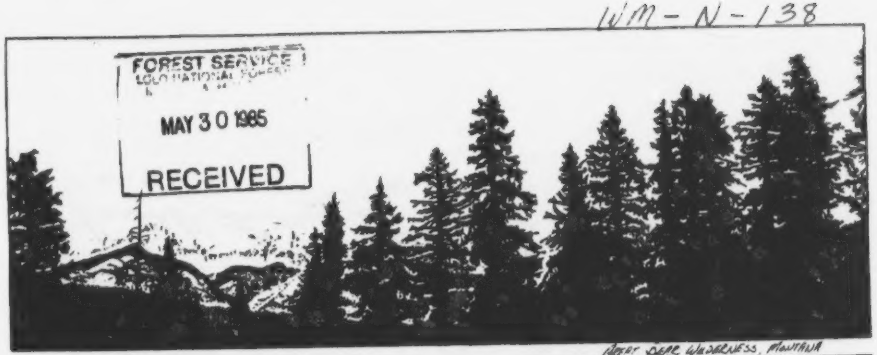
FOREST SERVICE RESPONSE CONTINUED

D Properly managed livestock grazing can have short-term adverse impacts on water quality, and may exceed state or federal water quality standards. A number of riparian grazing allotments have been terminated because of stream impacts during the past five years. All allotment management plans to be developed by 1990 (Management Area [MA] 14) will address impacts on other resources such as potable water sources for domestic or municipal developments, recreational dwellings within or closely adjacent to the Forest boundary, fisheries resource, and developed recreation sites where the adjacent Forest land allocations permit livestock grazing (MA's 1-5, 8-11, 14-19 and 21-25).

READEX FICHE

WM-N-138

FOREST SERVICE
LOLO NATIONAL FOREST
MAY 30 1985
RECEIVED



GREAT BEAR WILDERNESS, MONTANA

May 28

Dear Mr. Daniels,

I'm writing to you to urge you
to keep the Great Burn wilderness whole
by including the Cache Creek/Irish Basin A
areas. I think you should cancel plans
for logging the Cube Iron-Mt. Silcox area B
and support the proposal to conserve a
40,000 acre wilderness there. Also include
Stony Mountain area in the wilderness near C
Rock Creek. I think you should keep all
roadless lands roadless and make them A
wilderness. There is such a small percentage
of wild land left, we need to keep all
that is left wild. Support the wildlands
and animals, no more roads or development

Yours Truly
Kathy [illegible] Swan Lake, Mt.

FOREST SERVICE RESPONSE

WM-N-138

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000) will remain roadless within the next ten years.

C In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

WM-N-139

FOREST SERVICE
LOLO
MAY 30 1985
RECEIVED

[illegible] Skalkaho Road
Hamilton, Mt. 59840
May 27, 1985

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24 Fort Missoula
Missoula, Mt. 59801

I am alarmed and concerned about the Lolo National Forest proposal to build excessive amounts of new roads! This forces us into a position of having wilderness designation be the only means of protecting the water resources. A B

It also forces us into a choice between wilderness vs. publicly subsidized timber harvest. C

Having been put in this position I urge you to place the area west of Rock Creek from Skalkaho Pass to the Welcome Creek Wilderness under the protection of roadless and/or wilderness designation. D

I also urge this protection for the Forest land around Quigg Peak as sedimentation caused by road building could seriously damage the Rock Creek fishery. E

I resent involuntarily subsidizing the timber industry. Let us pay the real cost of lumber in the marketplace. And let us not pay the untold costs to water resources that could have been avoided through reasonable timber harvesting practices. C

Again, please reverse the policy of new road building and provide genuine protection for these areas. Also recommend similar protection by the Bitterroot and Deerlodge National Forests on adjoining lands. F

Sincerely,

Kenneth M. Loucks

Kenneth M. Loucks

FOREST SERVICE RESPONSE

WM-N-139

A Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

B The Lolo Forest has shown in Forestwide Standard Nos. 14 through 20 what steps will be taken to protect the water quality. They explain the items that will be monitored and how degradation will be determined. These standards are stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. The Forest will also work with private landowners to protect watersheds by following Forestwide Standard No. 14.

C The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

D In the Stony Mountain area - the area west of Rock Creek from Skalkaho Pass to the Welcome Creek Wilderness -, 30,900 acres will be managed in a roadless condition during the Plan period.

E Quigg Peak, which includes 60,800 acres, is recommended for wilderness in the Final EIS. The rest of the area (about 9,000 acres) will remain roadless through the next 10 years.

F The Rock Creek chapter (Chapter IV) provides for management of the Rock Creek drainage by bringing together the direction for Rock Creek from both the Deer Lodge and Lolo Forest Plans.

WM-N-140

FOREST SERVICE
LOLO NATIONAL FOREST

MAY 30 1985

RECEIVED

284 Skalkaho Road
Hamilton, Mt. 59840
May 27, 1985

Orville L. Daniels
Supervisor
Lolo National Forest
Building 24 Fort Missoula
Missoula, Mt. 59801

I am concerned about the Lolo draft plan to increase roading 2.5 times today's A
level. This type of planning leads me to believe that the only way to
protect water and other resources is through more wilderness designation. B

As a taxpayer I am tired of subsidizing the timber industry. I would rather
see the true costs of road production be reflected in the marketplace. C

The remaining roadless areas do not contain stands of high value timber. It is
not worth sacrificing the elk habitat, fisheries and recreational resources for
such low quality yield. D

I am especially concerned about the protection of Stoney Mountain. It is
vital that the Lolo side of Stoney Mountain be included in wilderness designation. E
In the face of pressure for road building, wilderness designation seems to be the
only way to insure protection of water, wildlife and recreational resources.

Sincerely,

Patrice Loucks

Patrice Loucks

WM-N-140

A Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

B There are currently 5,440 miles of system roads on the Forest. Under Alternative d, a potential total mileage of 11,109 is projected, but the number of miles of roads open for use will increase only slightly. By closing roads, the Forest Service can mitigate much of the potential impact on other resources.

The Lolo Forest has shown in Forestwide Standard Nos. 14 through 20 what steps will be taken to protect the water quality. They explain the items that will be monitored and how degradation will be determined. These standards are fairly stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. The Forest will also work with private landowners to protect watersheds by following Forestwide Standard No. 14.

C To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability.

D Since the construction of roads and growing of timber is a long-term investment, it must be analyzed for the long term. The Lolo's analysis indicates that the lands termed "suitable" are indeed economical to road and manage timber on while wildlife and recreational uses continue.

E In the Stony Mountain area (the area west of Rock Creek from Skalkaho Pass to the Welcome Creek Wilderness), 30,900 acres will be managed in a roadless condition during the Plan period.

FOREST SERVICE
MAY 30 1985
RECEIVED

M-N-141
(1 of 4)

James F. Curtis
9650 Grant Creek Road
Missoula, MT 59802
May 28, 1985

Mr. Orville Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Ft. Missoula
Missoula, MT 59801

Dear Mr. Daniels:

I appreciate this opportunity to comment on the 1985 Lolo National Forest Draft Plan and EIS.

Among the various alternatives I find alternative b to be the most acceptable because of its stated objectives and philosophy. However, before alternative b can be supported with complete enthusiasm several modifications need to be made. In addition there are a number of puzzling and inconsistent statements concerning alternative b in the EIS that need to be explained or corrected. A

Specifically, I find the following to be puzzling and inconsistent with the objectives and philosophy of alternative b:

Table II-24; Potential Catchable Fish Populations in Streams indicates that b will have one of the lowest populations of catchable fish despite the fact that the objective of b is "to emphasize nonmarket uses, especially roadless management, visual quality, wildlife, fish habitat, and water quality." Also to be noted is the statement on page II-25 "Aquatic habitat improvement projects are featured, acceptable activities in riparian zones are limited, and maintenance of the Forest's appearance is emphasized. Direct habitat improvement, along with limited sediment-producing activities on the rest of the Forest, results in a potential for increase in fish populations." Obviously, the number given in Table II-24 is completely inconsistent with these statements concerning alternative b. B

Table II-26 indicates that the timber output for alternative b will be almost as high for the first four decades as that of alternative d, despite the fact that their objectives and philosophy are stated to be quite different. Note the following statements concerning b: On page II-24, "Timber management is confined to the most productive sites." On page II-25, "Timber management is encouraged on the most productive sites that do not have soils, wildlife, or visual constraints. This results in fewer acres suitable for timber management and lower timber sale volume offerings from the current situation." Contrast these statements with the description for alternative d, page II-30, "The objective is to allocate most lands of moderate or higher site quality to timber producrtion, maintaining or increasing current sell levels. Timber harvest levels are higher than the C

FOREST SERVICE RESPONSE

M-N-141

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B Alternative b has a lower fish population in the future than other alternatives because the "natural" philosophy of this alternative was interpreted to provide for use of direct habitat improvement projects only on those streams that had been adversely altered by man in the past, with the objective of restoring full fisheries potential to these altered stream segments. The statement that indicated habitat improvement projects would be featured was misleading and has been deleted. The greater level of direct habitat improvement proposed on several other alternatives more than compensates for the adverse consequences some of the associated management activities may have on fish habitat in these other alternatives; hence, the larger fish propulation expressed in these alternatives.

The fish numbers projected for the future in Alternative b are slightly lower due to the slightly increased access when roading is complete.

C The major differences between the preferred Alternative d and Alternative b are in areas other than timber harvest levels. The winter range productivity is much greater under Alternative d management. Also, in order to maintain timber harvest levels, a greater investment in reforestation and precommercial thinning is required in Alternative b. Alternative b has less suitable land needed for timber harvest because greater growth is expected from intensive management practices.

In addition, concentrating harvest on the more productive timber lands increases the roads in riparian areas. The statement that timber harvest levels are higher than the volume currently offered is true for both alternatives. Offerings in the last five years have been less than the Allowable Sale Quantity (ASQ) in either alternative; previous offerings often exceeded the projected ASQ. Many comments received showed a concern that future timber harvest levels should be increased to make up for timber harvest from private holdings soon to be depleted.

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volume currently offered..." Clearly these contrasting statements are not consistent with the nearly equal prediction for timber outputs shown in Table II-26. Something is wrong. Also inconsistent with the timber output number is the different acreage of land suitable for timber management shown in Table II-28. The acreage for b is substantially lower than that for d.

Another inconsistency is found in Tables II-31 and II-32. Table II-31 predicts higher water yields for alternative b than for either d or e. Table II-32 shows a greater amount of sediment producing activirty for alternative b than for either d or e. These numbers are completely inconsistent with the contrasting philosophys stated for the three alternatives and also inconsistent with the following statement on page II-66, "Alternatives b and f have low management intensities and, as a result, their potential for sediment production and water yield increases are low." D

Still another inconsistency, that may be related to the apparently inflated numbers for water yield and sediment yield, appears in Table II-35: Road Construction by Decade. Here we are told that alternative b will require more miles of road constructdion than alternatives a, c, d, or e, despite the fact that b is supposed to be a low development alternative in which "Land is allocated for nonmotorized dispersed recreation opportunities with emphasis on simple, rustic facilities that require minimal development and disturbance of the Forest environment. Motorized access is limited." and in which only 23 percent of the 776,190 currently roadless acres on the Forest is to be available for development with 28 percent recommended for wilderness and 49 percent allocated to roadless management. In view of these these statements concerning the objectives of alternative b the numbers for road construction simply do not make any kind of sense. E

It would appear to a lay person, like myself, that the numbers in these tables have been derived from some process that has little or no relation to the stated objectives and philosophies for the various alternative, and one is led to wonder which to believe, the numbers or the narrative descriptions. Certainly, it is imperative that this problem be resolved in the final plan if the public is to have any trust in the information presented. F

The following improvements should be made in alternative b in the final Lolo Forest Plan.

1. The wilderness recommendations should be increased. The acreages and boundaries proposed by the Montana Wildlands Coalition for Stony Mountain, Lolo Creek, the Great Burn, and Cube Iron/Silcox should be adopted and these areas should be included in the wilderness recommendation. G

There are no significant conflicts with wilderness in the Stony Mountain area. It would constitute a valuable addition H

FOREST SERVICE RESPONSE CONTINUED

D The information in Tables II-31 and II-32 is inconsistent with the statement on RDEIS page II-66. The statement - "Alternatives b and f have low management intensities and, as a result, their potential for sediment production and water yield increases are low" - is incorrect. While Alternative b projects a relatively low management intensity for the entire Forest, the areas allocated to timber management are intensively managed to maintain a flow of products capable of contributing to community stability. Table II-30 displays acres of silvicultural treatment by decade. In the first decade, for example, Alternative b requires nearly twice as many acres of clearcut harvest as Alternative d. For the first several decades, the total number of acres of regeneration harvest projected is actually greater in Alternative b than in Alternative d (Table II-30). Clearcutting and other regeneration harvest produce higher levels of water and sediment than partial cut harvests. A clarification in the comparison of alternatives (FEIS Chapter II, Section 9a) has been made.

E There is an error in Table II-35, Road Construction by Decade concerning road mileage on Alternative b. This table has been corrected in the FEIS.

F The errors pointed out have been corrected in the FEIS. The planning effort has spanned three draft EIS's over several years. Methodology and terminology have become more refined. As drafts were completed and alternatives added or subtracted to display different philosophies, discrepancies in the tables have become apparent. Through the editing of the Revised Draft EIS, not all errors were found and corrected. Errors discovered by you and others have been corrected in the FEIS.

G The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

The FEIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

H In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period.

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to Montana's designated wilderness. There is a strong local constituency for wilderness for the Stony Mountain area.

Boundaries for a Lolo Creek wilderness addition were negotiated between conservationists and industry representatives in 1983. This negotiated agreement should be respected. I

The division of the Great Burn into two areas by leaving out the Cache Creek/Irish Basin area is very bad land allocation and should be corrected. There is no justification for splitting the Great Burn. J

2. All of the Marshall Peak roadless area should be allocated to roadless management. K

3. Mineral leases for all roadless management areas, whether new or reissued, should include No Surface Occupancy Stipulations. L

Following are general comments that apply to the plan as a whole, rather than to particular alternatives.

Effects on the Aquatic Habitat

The information presented on water yields and sediment yields is entirely inadequate. Although the numbers presented in Tables II-31 and II-32 provide some basis for comparisons among alternatives (providing one assumes the numbers to have some basis in hard data), they provide no basis for predicting the real effects on the aquatic environment. There are no answers to such questions as: What is the expected percentage increase in water yields for any stream? In quantitiave terms what are the expected sedimentation yields for various alternatives. Without such quantitative data numbers indicating potential catchable fish populations are pure guess work. The plan should admit this, rather than pretending that there is a solid basis for such predictions. M

The statement that the Lolo Forest supports 96,000 catchable trout is pathetically inaccurate. Rock Creek, alone, supports several times that number. N

There is no indication that the Forest is committed to long range maintenance of the aquatic habitat. For a Forest in which management practices can have profound effects on some of the best trout streams in the country this is a very serious matter. Mitigation measures are no answer, since they can never more than partially offset the negative impacts of damaging management activities, e. g., road construction, tractor logging, clear cutting. O

Timber Emphasis

Throughout, there is too much emphasis on timber management and timber harvest. No justification is given for this over-emphasis on timber production. Given the recent history of P

FOREST SERVICE RESPONSE CONTINUED

I The FEIS recommends a portion of Lolo Creek for wilderness designation. This is a change from the draft statement.

J In response to public comments, the Irish Basin-Cache Creek area is recommended for wilderness.

K The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres as roadless management.

L In Mountain States Legal Foundation v. Watt (1980), Federal Judge Bremmer declared that the Forest Service may not arbitrarily put blanket NSO (No Surface Occupancy) stipulations on roadless lands. During the formation of the Forestwide Environmental Assessment for oil and gas leasing, the Lolo resource specialists identified a number of special stipulations which would be added to leases issued in roadless areas to protect/mitigate any impacts. This listing of stipulations is included in Management Area (MA) 11 as part of the direction for managing the Forest's roadless lands.

M Predictions for water yields and sediment yields are problematic. The yield calculations are based on current data and research on a Forest-wide basis and included in the FEIS. The numbers are estimates based on projections from actual data. The numbers are indicators for comparisons between alternatives and are not absolute.

The water quality, aquatic environment and fisheries habitat monitoring proposed in the Forest Plan is designed to sample the range of projects ongoing in watersheds of various geologic and hydrologic characteristics that have the potential to alter water quality, aquatic environment or fisheries habitat. Based on reasonable budgets and personnel ceilings, monitoring efforts are designed to have a moderate level of precision. Forest level monitoring is not intended to duplicate the intensity of current research efforts or research needed to adequately predict sediment influences on fish populations. Compatible research to determine the fisheries response to sediment is underway by the Forest Service Intermountain Forest and Range Experiment Station. Forest-level monitoring is designed to provide management level information to the Forest Supervisor that assesses whether assumptions and predictions of effects of management actions were accurate. If these assumptions and original predictions were not accurate, then Forest Plan Figure V.1, Decision Flow Diagram for Evaluating Variability of Monitored Activities, will be the basis for modification of actions or the Plan.

N The 96,000 value of catchable trout was developed in earlier drafts with essentially no population estimates available for the Lolo National Forest streams, Rock Creek being the exception. BPA funded tributary studies in 1984 by Montana Department of Fish, Wildlife and Parks provided new information that resulted in a new Forest estimate of 906,000. The new estimates have been incorporated in the Final documents.

O The Lolo Forest has shown in Forestwide Standard Nos. 14 through 20 and 28 what steps will be taken to protect the water quality. The Standards explain the items that will be monitored and how degradation will be determined. These Standards are stringent and will continue the implementation of Better Management Practices on the Forest.

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(4 of 4)

timber sales there is no reasonable basis for predicting that larger volumes of timber will be salable in the future. Even if the demand for such volumes of timber were to develop, the past history clearly demonstrates that managing the Lolo Forest for timber production is a money losing proposition and makes no economic sense, quite apart from the environmental damage that inevitably results. P

Monitoring

No development activities should take place unless and until an adequate and reliable monitoring program has been developed, and funding for such monitoring program has been assured. The time is past for proceeding merrily with development that has serious negative impacts without even knowing how damaging such impacts are. If at any time funding for a monitoring program is withdrawn, the related development activities should immediately be stopped. Q

Economics

It is assumed that the "willingness to pay" values for recreational use was the mandated national average of $21 per RVD. This value is patently ridiculously low and impossible to justify. Studies in both Idaho and Colorado have shown values greater by factors of two to three. On the other hand the values for timber are inflated and do not take into account the subsidy resulting from below cost sales. Likewise, the values assigned to live stock grazing are inflated, since they are not based on the actual fees. Unless these matters are corrected in the final plan, the plan will be subject to challenge in court on the grounds that it is factually flawed and inadequate. R

I look forward to the issuance of the final plan. It is to be hoped that many of the apparent defects in this draft will be corrected.

Very sincerely

James F. Curtis

James F. Curtis

FOREST SERVICE RESPONSE CONTINUED

P The Lolo Forest Plan responds to the existing social and economic structure of local communities. It represents a response to varied public expressions of those social and economics needs derived from public involvement. The Forest Plan is intended to offer levels of timber volume that support rather than impact base employment, income and job distribution in local communities.

Timber projections are developed from harvest volumes sold during the past 20-30 years. History is variable in terms of timber volumes offered and sold. In the past five years, the volume sold has averaged about 60 million boardfeet (MMBF). Over an extended time period, volumes up to 160 MMBF have been sold. It is evident that during peak value periods, any sale will sell, while during low timber value periods, only the best sales will sell. If over an extended time period, the timber market results in low volume being sold from the Lolo, a revision in the Plan may be considered.

To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. In some cases, particularly during the initial sale entry into an unroaded area, the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. The economic analysis in the Forest Plan also considers long-term management for the entire Forest rather than individual sales.

Q The Lolo is committed to meeting the Monitoring Action Plan appearing in Forest Plan Chapter V, D. Monitoring and Evaluation. Forestwide Standard No. 28 has been modified to refer to the Monitoring Action Plan. In addition, a statement has been added to the Monitoring and Evaluation section requiring a revision to the Forest Plan if budgets are insufficient to implement the intent of the Forest Monitoring Plan.

R The values per recreation visitor day (RVD) for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and the RPA program, as required by the Forest and Rangeland Renewable Resource Planning Act. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging and so forth to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy—in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

EM-N-144

FOREST SERVICE
MAY 30 1985
RECEIVED

James Phelps
2110 Bradbrook Court
Billings, Montana 59102

May 29, 1985

Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, Montana 59801

Dear Sir:

Please consider this as my comment upon the Lolo National Forest revised draft Environmental Impact Statement and Forest Plan.

The objective of maintaining a "viable" population of the different species of wildlife is a change from former Forest Service policy of trying to maintain the "maximum" populations possible. However, it is noted that all alternatives offered are designed to ensure a minimum viable population. "Minimum" is a dangerous word in dealing with a wildlife population. A

I agree that elk is the big-game species of greatest public interest on the Forest. But the great increase in roads isn't all that good for the elk, (B) and won't help water quality. (C) I also question the assumption "that deer habitat is similar to elk habitat and population trends will be similar between the species." Some similarities, yes; otherwise, no. An early study (Edward P. Cliff. 1939. Transactions 4th North American Wildlife Conference, pages 560-569) pointed up that elk can outcompete deer. Management practices can keep the two in the desired balance. D

As to the Rock Creek management plan, I'm not well enough acquainted with it to do more than applaud the efforts to do it right. I was puzzled by the use of different symbols of the Deer Lodge and the Lolo to describe the same kinds of management areas. It is this sort of thing that makes it hard to analyze documents of this kind. E

Regarding the wilderness proposals, I'm on better ground to make comment. I would urge the Cache Creek/Irish Basin be included in the Great Burn proposed wilderness. I would also ask that the service recognize the support for wilderness protection for the Cabinet Lake backcountry (otherwise known as Cube Iron/Mount Silcox). Getting back to Rock Creek, mentioned above, is there any good reason for not including Stony Mountain in wilderness, as it appears conflicts here are at a minimum. F

The Lolo wildlife management people were among the first to recognize that snags are important for certain wildlife, and to encourage management accordingly. I urge this not be lost in the future. G

Very truly yours,

James Phelps

copies
Senator Melcher
Senator Baucus
Representative Williams
Representative Marlenee

FOREST SERVICE RESPONSE

EM-N-144

A The National Forest Management Act and subsequent implementary regulations state that each Forest must maintain minimum viable populations of each species.

Security is an integral part of elk habitat. References to security can be found in monitoring items 1-1 and 1-2, Forest Plan Management Areas 18, 19, 22, 23 and 26, and Forestwide Standard Nos. 21, 23, 26 and 52.

B Wildlife Management Concern #1 was a significant problem when the planning process began in 1978. At that time it was understood that there was some relationship between elk productivity, hunting recreation opportunities and open road density. The road management at that time was done on a project-by-project basis with no Forestwide goals. As a result of the planning process, the road management for big game involves the following steps: 1) Forestwide Standard No. 52 identifies big game and hunting recreation as a primary benefit of road management; 2) based on the Jack Lyon road/elk model, a maximum open road mileage of 1,833 was established for the Forest. This equates to approximately 1.1 miles of open road per section within roaded lands (wilderness excluded), and approximately .57 miles of open road per section Forestwide; 3) as a tool for distributing open road miles, the Forest was divided into high, medium and low quality elk habitat. Department of Fish, Wildlife and Park personnel assisted in this step. In the Travel Plan, all new roads in high quality habitat will be closed, and existing roads will be closed to a density of 1.1 miles/section. New roads in moderate quality elk habitat will be closed to a density of 1.1 miles/section although existing roads currently open will generally remain open. These steps are outlined in the Travel Plan Data Base.

C The Lolo Forest has shown in Forestwide Standard Nos. 14 through 20 what steps will be taken to protect the water quality. The Standards explain the items that will be monitored and how degradation will be determined. These Standards are stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. Forestwide Standard Nos. 50 and 52 provide direction regarding road design and road management and the potential impact on water quality. The Forest also will work with private landowners to protect watershed, by following Forestwide Standard No. 14.

D Mule deer and elk have similar habitat requirements and respond to modification of vegetation in a similar fashion. Whitetailed deer require higher levels (percentage) of cover but still follow a similar trend. Both deer species are more adaptable and less vulnerable to habitat modification than elk. Statements in the Final EIS were clarified to indicate these differences and similarities.

E The Rock Creek chapter was developed to display the common management direction for Rock Creek within the two Forests. Each Forest is required to develop a Forest Plan. Each Forest developed a Forest Plan independent of the other; the Management Areas in the Rock Creek drainage were pulled together from each plan. This did result in the use of different symbols for each plan, requiring that a merge of the Management Areas and the accompanying management direction. Had the need for development of a special section for the Rock Creek drainage been recognized sooner, the confusion could have been reduced.

EM-N-144

FOREST SERVICE RESPONSE CONTINUED

F The Irish Basin-lower Cache Creek area is recommended for wilderness in the Final EIS.

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000) will remain roadless within the next 10 years.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

G Forestwide Standard No. 25 provides for continuing snag management on the Forest. The procedures for implementing this standard are in Appendix N.

M-N-145 5-29-85

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

FOREST SERVICE
MAY 30 1985
RECEIVED

Name Dick Kulawinski

Address 9 Emerald Dr

Missoula, Mt. 59802

Organizational Affiliation

Claim Holder (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

To Orille L Daniels, Forest Supervisor:

The following are my comments along with my sons and daughters on the Lolo National Forest Plan Revised Draft Environmental Impact Statement:

A ① Prefer Alternative "E"

B ② Besides fluorspar in the Snowbird Mine, there is also a rare earths (Yttrium) deposit and which extends to Cedar Log Lakes to the west and into Irish Basin to the east. There Is also a more recent study "Economic Geology and Geochemistry of The Snow Bird Deposit" published in "Economic Geology; Vol. 80; 1985; pp 394-409) This study was done in 1970 & 1971.

③ On Proposed Alternative "D" T12N, R25W make all of sections 19 & 30 to Managment Emphasis Discription G and change the Mgmt Emphasis Dircription from "F" to "G" in Irish Basin - lower Cache Creek.

C In T13N R25W Sections 24 and 25 Cedar Log lake just west of the Snowbird Mine change Mgmt Emphasis Discription "H" to "G".

④ On Proposed Alternative "D" R26W, T14N and R27W, T14N; all sections change Mgmt Emphasis "H" to "G". This includes upper Quartz Creek, upper Trout Creek, French Creek drainage, French Lake, Hidden Lake, Lightning Pk, Little Phoebe Mt.

D ⑤ Change Inventoried Roadless Area 01807 from Mgmt Emphasis Description "H" to "F" in the Rock Creek Drainage.

Thank you for considering my requests

Sincerely
Dick Kulawinski

FOREST SERVICE RESPONSE

M-N-145

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land. Alternative d provides for the enhancement of resource such as wildlife habitat, on wilderness and roadless lands as well as on lands that will be developed. Lands harvested for timber will also be managed to meet other resource goals.

B The areas referred to are within the Great Burn/Hoodoo, which includes Irish Basin-Cache Creek area, and are recommended for wilderness in the Forest Plan. The rare earths deposit has been added to the listing of minerals for this roadless area in the Final EIS.

C In consideration of the proposal to change the management direction from proposed wilderness management, Management Emphasis h, to Management Emphasis g, in the headwaters of Cedarlog Lake Creek, Quartz Creek, Upper Trout Creek, French creek including the areas surrounding French Lake, Hidden Lake, Lightning Peak and Little Phoebe Mtn.; it is determined that the proposed management for the area is well suited to wilderness management. The Forest will continue to support the proposal for a Great Burn wilderness area.

D The management of inventoried Roadless Area number 1807, Quigg Peak, is well suited as an addition to the wilderness system and the effort will continue to include this area in the wilderness system.

WM-N-148

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name Richard Kuhl
Address 567 N. Main
Kalispell, MT 59901
Organizational Affiliation ____
________________ (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

The Draft Forest Plan needs the following improvements:

1. A clear committment to protecting the water quality of Rock Creek needs to be made. This should be a top priority.]A

2. The proposed Great Burn wilderness should include the Cache Cr.-Irish Basin area.]B

3. The Lolo side of Stony Mtn. should be given wilderness protection.]C

4. A 40,000 acre Cube Iron-Mt. Silcox wilderness area should be created.]D

FOREST SERVICE
LOLO NATIONAL FOREST
MAY 30 1985
RECEIVED

FOREST SERVICE RESPONSE

WM-N-148

A The Forest Plan states the commitment to protecting the water quality of Rock Creek through the inclusion of Chapter IV, Rock Creek. In that chapter, the Forest recognizes that Rock Creek is a Blue Ribbon trout stream and that the values that characterize a Blue Ribbon trout stream will be maintained. As part of the fisheries production objective, the Forest intends to manage the headlands to provide the quantity and quality of water necessary to maintain the total Rock Creek aquatic ecosystem.

B The Irish Basin-Lower Cache Creek area is recommended for wilderness management under the Final EIS.

C In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

D The Final FEIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000) will remain roadless within the next ten years.

SL - N - 323

Box [illegible]
Seeley Lake, Mt. [illegible]
May 14, 1985

Mr. Dennis L. Johnson, Dist. Ranger
Seeley Lake Ranger Station
Drawer G
Seeley Lake, Mt. 59868

Re: 2nd DEIS

Dear Dennis,

I object to the goal of recovering the grey wolf to nonthreatened status. There is no evidence of any resident animals in the Lolo Forest yet the goal will require you take action in the not too distant future and it will give a bigger lever to those who oppose timber harvest and development. A

A few years ago, various managers told us the only threat to grizzly bears was a bullet, no one knew what grizzly habitat was (they still don't), and protecting grizzlies would not affect timber harvest. Now grizzlies are the first consideration in every move the FS makes. Additional wilderness has been justified for the bears, light selective cuts have been planned for the bears where clearcuts would have been better silvicultural practice and operating seasons have been so reduced that it is often difficult to complete road construction and logging on any reasonable schedule. B

There is too much wilderness on your district now and none of the additional 118,000 acres proposed for wilderness are needed for that purpose. Comparing the millions of acres in wilderness and the few users with the number of users, jobs and economy on the non-wilderness land, there is no way additional wilderness can be justified. C

The harvest level should be at the sustained yield capacity starting from the present. The Forest Service, although cutting well below the sustained yield level, hasn't increased the harvest in years. It is not possible to believe they will slide along at an even lower level for ten years and then suddenly increase toward sustained yield and there is no reason for the country, state and community to suffer the loss of income from over-mature timber left to rot and decay or be disposed of through un-suppressed fires or prescribed burns which are presently favored by all government agencies. D

Sincerely,

David D. Whitesitt

RECEIVED
MAY 29 1985

FOREST SERVICE RESPONSE

SL-N-323

A There is no evidence of resident wolf populations on the Lolo. Wolf sightings occur at a low frequency at several locations on the Forest. The national direction for wolves is to protect these scattered individuals until such time as recovery ecosystems and population objectives are established.

B The Forest Service agrees that in more recent times, silvicultural practices and operating seasons have been impacted by grizzly bear management. Management Area (MA) 20 shown on the Forest Plan map includes the lands designated to help recover the grizzly bear while allowing timber harvest or using timber harvest to enhance bear habitat. MA 16 has fewer restrictions. The Plan will provide more certainty on how to manage the land in the future.

C On the Seeley Lake Ranger District, 69,250 acres of the Bob Marshall Addition (1405) are being recommended for inclusion in the wilderness system.

D The availability of timber from private lands and the market conditions of the timber industry have a direct effect on the demand for public timber sales. As timber reserves on private lands become depleted and market conditions improve, the volume of timber offered, sold and harvested on the Forest will increase toward the Allowable Sale Quantity (ASQ).

COMPOSITE PUBLIC COMMENT

M-N-324-Matt Thomas M-N-325-Rick Ryan M-N-344-Ann Marie Chytra
WM-N-345-Steve Bathake

Four people presented the opinion that they believe there are plenty of areas in the U.S.A., and particularly Montana, where there are roads. They believe we should keep areas that are roadless that way to preserve our wildlands and protect them for future generations. They are concerned that we preserve as much unspoiled land as we can and support the position of the Montana Wilderness Association on the upcoming wilderness bill.

FOREST SERVICE RESPONSE

M-N-324 M-N-325 M-N-344 ?-N-345

The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

Lawrence Jakub M-N-326

"received
5-30-85

May 23, 1985

Dear Forest, (Hayes)

I appreciated the opportunity to meet with you on May 22, 1985 regarding the proposed Lupine Creek timber sale and the Lolo Forest Plan as it relates to the Lupine Creek Area. It is because of efforts by Forest Service people such as yourself that the credibility and professionalism of the agency is being enhanced.

First with regard to the allocation of the Burdette - Lupine Area to "Wildlife other" I strongly concur. I believe the principal value of this area is related to big game habitat, especially for elk and deer. Every effort should be devoted maintaining and enhancing where possible this key value. I do believe, however, that allocating a small portion of the Lupine drainage (sections 11, 12, 13 & 14) to a "timber/Range" designation is detrimental to the overall management of the Lupine - Burdette Area. As you know this is the area being proposed for the Lupine timber sale. My recommendation would be that the total Lupine Creek drainage be included in the "Wildlife, Other" category. My reasons for this are discussed below with regard to the Lupine timber sale proposal. A

In the event the proposed allocation in Lupine retains the "timber/Range" option and the Lupine sale is to go forward, I have the following comments. The aspect of the Lupine drainage where this sale is located provides key elk and deer [illegible] during the [illegible]

FOREST SERVICE RESPONSE

M-N-326

A Almost 15,200 acres of the Burdette area will be managed for "wildlife-other." However, a small portion of the Lupine Creek drainage does not fit the Lolo's criteria for "wildlife-other" management emphasis. This area is not winter range or suitable old growth habitat, critical summer range or grizzly bear habitat. The area better fits the description for big game summer range since it is a well-drained, heavily timbered, mid-elevation site. While big game security, hiding cover and hunting recreation are concerns, the Forest believes it can resolve these concerns with the proposed timber allocation by careful attention to road management, cover protection and overall timber sale design.

M-N-326 p.2

hunting season. Also, elk travel through this area when moving into and out of the Lupine drainage when disturbed. I believe this sale will be detrimental to ~~this~~ elk security and travel corridors. I would propose that clearcuts not be used since security and cover is reduced even further in what is essentially an open drainage. Further, all roads should be closed and eliminated following cutting. Finally, I would like to see as further mitigation to the sale that the road along the Lupine-Burdette Divide (a tributary of Wagon Mt. Rd.) be closed. I have proposed this closure on numerous occasions to the District but have never been given a credible answer for why it remains open.

In summary, I would propose that the entire Lupine Creek drainage be allocated to "wildlife, other" in the Forest Plan. Not only do I believe this would demonstrate that the Forest Service truly plans to maintain and enhance a very valuable big game habitat but I believe it makes good management sense. In the event, my suggestion is not heeded and the allocation is not changed, in the event ~~that~~ there is a timber sale I would propose that there be no clear cutting, cutting units be limited to units 16 & 22, roads be closed and eliminated, and as further mitigation, that the road on the divide between Burdette & Lupine be closed permanently. B

Again thanks for the opportunity to comment. I would like to be kept informed of this proposal.

Lawrence M

FOREST SERVICE RESPONSE CONTINUED

B Regarding the comments about the proposed Lupine Timber Sale, your input and knowledge will be useful as the Lolo proceeds to implement the Forest Plan with project level work. The wildlife biologist will be involved in the project level planning, and will make recommendations concerning big game protection. You will be contacted about future activities in this area.

?-N-327

Tom Coston
Regional Forest/USFS
Missoula Mt. 59801

Dear Mr. Coston,

I was raised on a farm in the Bitterroot and would like to convey to you some of my feelings concerning the Beaverhead and Lolo National Forests.

I feel that further road building plans should be stopped A and that timber not be sold below cost. B

I would like to see North and West Big Holes designated as Wilderness C as well as Cabinet Lake Country, D Stony Mountain and the Irish Basin. E

Thank you for your concern and consequential action

CC: Pat Williams
Max Baucus
John Melcher
Ron Marlenee

FOREST SERVICE RESPONSE

?-N-327

A Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

B The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

C As part of the Cabinet Lake area, Cube Iron-Silcox roadless area is not recommend for wilderness in the Final EIS; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

D In the Stony Mountain area, 30,900 acres will be managed in a roadless condition. An additional 4,000 acres will be developed after the first decade. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

E The Great Burn/Hoodoo, including the Irish Basin-lower Cache Creek area, is recommended for wilderness designation in the FEIS.

COMPOSITE PUBLIC COMMENT

Approximately 23 people responded with the statements that they are opposed to proposed increases in roading due to the impact on economics, fish, wildlife, and wilderness. They oppose below cost timber sales and roading currently roadless areas.

They strongly support wilderness designation of the following lands:

Great Burn
Cabinet Lake Country
Stony Mountain
quigg Peak

And, they also support complete protection for the unprotected lands of the Bob Marshall ecosystem.

M-N-328-Linda Smith
330-David Schmitt
331-Grant Wiegert
332-Patty Hosea
333-Diana Moffett
334-Karen Hall
335-B. Haus
336-Samuel Reid
337-Margaret Langley
338-John Zelazny
339-Mark Lucurz
340-Dana Karuza
341-David Goodhart, Jr.
342-Cindy Burkhardt
343-Andrew Pilskalns
346-Kathy Ahlenslager
347-Kim Sherwood
348-Sarah Myslis
350-Jim Atkinson
351-Peter Staltz
353-Paula Shulman
372-Toni Strong
395-Dana McMurray

FOREST SERVICE RESPONSE

M-N-328 330 331 332 333 334 335 336 337 338 339 340 341 342 343 346 347 348 350 351 353 372 395

The Forest has shown in Forestwide Standards No. 14 through 20 what steps will be taken to protect the water quality of the Lolo. They explain the items that will be monitored and how degradation will be determined. These standards are fairly stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. The Forest will also work with private landowners to protect watersheds by following Forestwide Standard No. 14

Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will only road those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

Of the areas of concern that are on the Lolo Forest:

The Great Burn/Hoodoo is recommended for wilderness, including the Irish Basin-Cache Creek addition.

As part of the Cabinet Lake area, Cube Iron-Silcox roadless area is not recommended for wilderness in the Final EIS. Grizzly bear habitat is designated for 9,464 acres and 14,136 acres are designated for roadless managment. Most of the area (about 36,000 acres) will remain roadless within the next ten years.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

For the Bob Marshall ecosystem on the Lolo Forest, 69,250 acres (of 120,900 acres) are recommended for wilderness.

M-N-329

Patrick André
701 S. 2nd St. W
Missoula, Mt. 59801

Tom Coston
Regional Forest/USFS
Missoula, Mt. 59801

Dear Mr. Coston,

I am very concerned with the present and future state of the Wildlands in Montana as well as in the rest of the country. However, Montana is my home and I think what we have saved of the natural environment is vital to all of us as human beings.

It is short-sighted to sell off or open up these valuable areas to exploration. These areas are our countries most valuable, precious resource. Let's keep them as they are. Let's not follow the way so many other states have chosen to go in giving up their respect for the land. A

Roads making more land accessable to private concerns are ruining habitat for elk, sheep, B bear, and are spreading knapweed, affecting water. C

I am opposed to any opening of these lands that must be strictly protected and even added to.

Sincerely. Patrick G. André

FOREST SERVICE RESPONSE

M-N-329

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B Forest management requires road access for timber harvest, recreation and protection from fire, insects and disease. Forest roads and their construction can have impacts on soil, water and wildlife resources, but measures have been developed to provide protection of these resources during and after road system development. Specific descriptions of these measures can be found in the Lolo National Forest Plan, Forestwide Standard Nos. 16, 49, 50 and 52.

Security is an integral part of wildlife habitat. References to security can be found in monitoring items 1-1 and 1-2, Forest Plan Management Areas 18, 19, 22, 23 and 26, and Forestwide Standard Nos. 21, 23, 26 and 52. Wildlife Management Concern #1 was a significant problem when the planning process began in 1978. At that time it was understood that there was some relationship between elk productivity, hunting recreation opportunities and open road density. The road management at that time was done on a project-by-project basis with no Forestwide goals. As a result of the planning process, the road management for big game involves the following steps: 1) Forestwide Standard No. 52 identifies big game and hunting recreation as a primary benefit of road management; 2) based on the Jack Lyon road/elk model, a maximum open road mileage of 1,833 was established for the Forest. This equates to approximately 1.1 miles of open road per section within roaded lands (wilderness excluded), and approximately .57 miles of open road per section Forestwide; 3) as a tool for distributing open road miles, the Forest was divided into high, medium and low quality elk habitat. Department of Fish, Wildlife and Parks personnel assisted in this step. In the Travel Plan, all new roads in high quality habitat will be closed, and existing roads will be closed to a density of 1.1 miles/section. New roads in moderate quality elk habitat will be closed to a density of 1.1 miles/section although existing roads currently open will generally remain open. These steps are outlined in the Travel Plan Data Base.

C Roads do provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time, noxious weeds are being found in Wildernesses or other undisturbed sites. The basic problem in noxious weed management is a lack of a good understanding of the autecological attributes of them or the synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work done todate has been related to cereal crop and range or pasture land control with limited emphasis on understanding the basic life cycle of the plant.

M. n. 329

While herbicide use may occur under special conditions, the topography and vegetation cover on the Lolo make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot and Flathead forests. Preliminary results of the study suggest a number of management practices that may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.

The Lolo has shown in Forestwide Standard Nos. 14 through 20 what steps will be taken to protect the water quality. The Standards explain the items that will be monitored and how degradation will be determined. These Standards are stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. Forestwide Standard Nos. 50 and 52 provide direction regarding road design and road management and the potential impact on water quality. The Forest will also work with private landowners to protect watersheds, by following Forestwide Standard No. 14.

M-N-349
119 Craig Hall
Univ. of MT
Msla, MT
59801
May 24, 1985

Tom Coston
Regional Forester/USFS
Missoula, MT 59801

Dear Mr. Coston

I feel very strongly that all 6 million acres of Montana roadless areas should be designated as wilderness. A

These areas should not only be permanently protected from development because of their fantastic beauty, but because of the habitat they provide for so many animal species, most notably the grizzly, elk, and bighorn sheep. It is important that we think not of what the wildlands and wildlife can do for us, but what we can do for them (to paraphrase a well-known quote)! For their own sake Montana's roadless areas MUST be preserved!

If you must have reason, other than the wildlife and wilderness themselves, to stop further development of the roadless lands, then think of future generations of Montanans. B What kind of a place will Montana be for them if there are no places to go hunting or camping and to just get away from the pressures and complexities of civilization? What kind of state will this Montana be if no matter where a person goes, they run into signs of man - roads, clearcuts, drilling sites, etc? The only way to prevent that from happening is to STOP - right now - any further destruction of the few remaining acres (6 million acres is not a lot to ask for) of pure wilderness that we have left in Montana.

One more time, though it can never be said enough, let me repeat.

DESIGNATE ALL 6 MILLION ACRES OF MONTANA'S
ROADLESS AREAS AS FULLY-PROTECTED WILDERNESS!!!

Ted Schwinden. Heather Jewell

c
Pat Williams
Max Baucus
John Melcher
Ron Marlenee

FOREST SERVICE RESPONSE

M-N-349

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B The proposed action provides for maintaining a high level of wildlife populations. For example, approximately 258,000 acres are allocated to big game winter range (Management Areas 18, 19, 22 and 23, Forest Plan) with the primary objective of optimizing winter range habitat conditions. Big game summer range is protected by a combination of Forestwide Standard Nos. 21, 23 and 26, and an allocation designed to protect critical habitat, MA 26. Habitat for old growth dependent species is provided in existing and proposed roadless and wilderness and in an old growth allocation, MA 21. Snag habitat is protected by Forestwide Standard No. 25. Grizzly bear recovery will be accomplished by a combination of Forestwide Standards Nos. 24 and 27, and two allocations designed to enhance grizzly bear habitat, MA's 20 and 20a. As assurance that riparian wildlife habitat is protected, all major streams are allocated to special streamside allocations, MA's 13 and 14, that emphasize wildlife, fisheries, watershed and recreation values rather than commodity values.

COMPOSITE PUBLIC COMMENT

M-N-352-Ron Ewart 361-Lorna Nuepele 364-Caryl Williams

Three people submitted the following opinions that as a citizen of Montana, they would like to submit some comments regarding the recent Lolo National Forest Plan. They feel that it is important to freeze the building of roads within the forest in order to prevent further degradation of the rivers in this area and animal habitat in the area. Any roading only destroys habitat quality because it destroys the security that isolation in the wilderness affords the true inhabitants. They are also opposed to roading for its negative effects on the watershed, and the fauna in such. A

They support conservation of our existing wild lands. It is the Forest's DUTY to save the wilderness as it is. Wilderness is a shrinking and non-renewable resource, and must be thought of in such a light. B

They feel that the following areas should be supported for wilderness status: C

Cube Iron-Mt. Silcox
The Great Burn
Rock Creek wildlands; Quigg Peak & Stony Mt.
Clearwater-Monture
Lolo side of Swan Front
Marshall Peak"

FOREST SERVICE RESPONSE

M-N-352, 361, 364

A Forest management requires road access for timber harvest, recreation and protection from fire, insects and disease. Forest roads and their construction can have impacts on soil, water and wildlife resources, but measures have been developed to provide protection of these resources during and after road system development. Specific descriptions of these measures can be found in the Lolo National Forest Plan, Forestwide Standard Nos. 16, 49, 50 and 52.

B The Draft EIS reviewed 776,190 acres of roadless land. The Forest recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

C The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres respectively for the Lolo Forest.

The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

Connie Hubbard
Box H
Philipsburg, MT
59558

WM-N-356

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 31 1985
RECEIVED

May 29, 8

Lolo National Forest!

I am concerned about your recommendations for wilderness. You can never have too much wilderness, and you have a hard time bringing land back to wilderness once its managed for some other resource like timber. I recommend more wilderness. A

My comments to your plan include these:

1) Please do not go overboard with roads; leave roadless areas roadless as long as possible. Do not increase your already too just roading of roadless areas. B

2) I am from Philipsburg & Enjoy outside of Stony Mountain. I'd like to see wilderness recommendation for Stony Mountain. C

3) Please make a wilderness out of some of the beautiful Cabinet Lake Backcountry. D

4) Keep the Big burn area as 1 contiguous area, including Cache Creek/Irish Basin area. E

5) Cube Iron - MT Silcox - I recomend wilderness, not logging. D

FOREST SERVICE RESPONSE

WM-N-356

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

C In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

D As part of the Cabinet Lake area, Cube Iron-Silcox roadless area is not recommended for Wilderness in the Final EIS. Grizzly bear habitat is designated for 9,464 acres, and 14,136 acres are designated for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

E The Final EIS recommends 88,100 acres of the Great Burn/Hoodoo area for wilderness, including the Cache Creek-Irish Basin area.

WM-N-357

RESPONSE FORM
Revised Draft Environmen
Impact Statement (RDEI

Proposed Lolo Forest Pl
February 15, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 31 1985
RECEIVED

Name Tony Hoyt
Address Box 51
Arlee, Mt 59821
Organizational Affiliation ____
____ (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

5/29/85

Dear Orville Daniels

After studying the 3rd D.E.I.S. I feel it is an improvement over the last – the construction of new Roads in still way out of Line, just too much emphisas on timber production A of the Alternatives, Alternative B still seems the most appealing – the economic value of wild Recreational land will increase as tourism increases and that type of land becomes scarcer B and thus more valuable – wild land is a renewable resource if [illegible] managed properly.

Under some of the Alternatives such as d much of ~~[illegible]~~ the lolo N.F. will [illegible] cease to exist as we know it – I followed one area in particula where I hunt Patt knob - north cutoff # 01794 – some of the Road building plans there are incompatable with wildlife its timber production only – and at a loss. C

thank you Tony Hoyt

FOREST SERVICE RESPONSE

WM-N-357

A Forest Service laws, dating back to the late nineteenth century, require the National Forests to be managed for multiple uses. The goal of the Forest Plan is to blend resource demand with resource supply. When resource demands conflict, the goal of the Plan is to provide for balanced use by all users. The selection of Alternative d as the preferred alternative is based upon analysis of these demands and the capability of the land.

Forest management requires road access for timber harvest, recreation and protection from fire, insects and disease. Forest roads and their construction can have impacts on soil, water and wildlife resources, but measures have been developed to provide protection of these resources during and after road system development. Specific descriptions of these measures can be found in the Lolo National Forest Plan, Forestwide Standard Nos. 16, 49, 50 and 52.

B The Forest recognizes the fact that recreational demand is increasing and that tourism is important to the economy of western Montana. Besides wilderness experiences, the Forest provides a wide range of roadless, motorized and developed recreation. The current capacity of developed sites exceeds expected demand for the first decade; therefore, no additional construction of facilities is planned. The Forest will encourage other agencies and private concessionaires to meet future demand.

C The specific area referred to, roadless area 01794, is to be managed in the Plan primarily for roadless recreation and non-roaded big game winter range (Management Area [MA] 19) with other non-roaded allocations comprising the majority of the rest of the area (MA 1, MA 6 and MA 27).

M-N-360

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
MAY 31 1985
RECEIVED

May 27, 1985

Dear Mr. Daniel,

We are writing to add our qualified support for Alternative B of the Lolo Forest Plan. Several features of this plan stand out: old growth habitat allocations, visual quality maintenance & relative low levels of road building. We want to suggest several changes in alternative B: A

1. Sediment yields are too high. Roading and tractor skidding should be decreased. B

2. Recreational values are important to all of us. Yet your plan consistently downplays such values. This should be corrected.

3. Rotation age for old growth areas should be 200 years. Also firewood cutting in these areas should be prohibited. C

4. Stony Mountain and Lolo Peak should be included as Wilderness as should Cube Iron/Silcox as recommended by Montana Wilderness Coalition. Adopt MWC's boundaries for the Swan Front and the Great Burn. D

3. The area designated as roadless along Monture Creek should be added to Monture Creek Wilderness recommendation. E

Thank you
Michael Terramin
Nancy Vasquez-Terramin
2502 Gleason
Missoula 59801

FOREST SERVICE RESPONSE

M-N-360

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land. Alternative d provides for the enhancement of resource such as wildlife habitat, on wilderness and roadless lands as well as on lands that will be developed. Lands harvested for timber will also be managed to meet other resource goals.

B Tractor skidding on steep slopes has been an ongoing concern during the planning process. The Lolo National Forest has placed special restrictions on tractor skidding land over 35 percent. Because of this, the amount of tractor skidding done on the Forest has been reduced. Each soil is treated with mitigation measures that consider the characteristics of the soil and attempts to minimize the particular hazard at each location. By using this kind of approach, areas can be developed with a minimum amount of sediment production.

C The values per RVD for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and RPA. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging, etc. to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

D Lands assigned for old growth management are scheduled on a double rotation basis. Depending upon the site productivity, the rotation period is currently established at 170 to 190 years. The primary function of old growth, however, is to produce an ecological condition, which is what we are predicating the management of these on, not necessarily any specific age parameter. Firewood cutting in designated old growth areas is not considered a problem since these areas generally will not be accessible by roads.

E The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 acres for wilderness. The recommended wilderness areas are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres are designated for roadless management.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

A portion of Lolo Creek (01805) is recommended for wilderness designation. This is a change from the draft statement.

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000) will remain roadless within the next ten years.

On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres respectively for the Lolo Forest.

M-N-366

FOREST SERVICE
MAY 31 1985

May 30, 1985
P.O. Box 8446
Missoula, MT 59807

Orville Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Ft. Missoula
Missoula, MT 59801

Dear Mr. Daniels:

I support Alternative B of the Draft Lolo Forest Plan because it is, in general, a balanced approach to wildland management, but several critical deficiencies need to be corrected: A

1. The Great Burn should be recommended as a whole wilderness area which must definitely include Cache Creek drainage and Irish Basin, integral and complimentary parts of the whole. Therefore, adoption of the Montana Wildlands Coalition boundaries is a step in the right direction. B

2. The Cube Iron-Mt. Silcox (Cabinet Lake backcountry) area should be recommended for wilderness as a primitive setting worthy of addition to the Wilderness Preservation System. Therefore, helicopter logging plans should be canceled and the local citizen's wilderness proposal adopted. C

3. The Quigg Peak wilderness proposal should be bolstered by a wilderness recommendation for the Lolo side of Stony Mountain. D

I strongly oppose the proposed dramatic increase in road construction which will seriously impact water and wildlife habitat quality. E The proposal for construction of high-cost roads into high-value wildlands for low-value timber is not economically sound especially when wildlife habitat and recreational values are deflated and timber values are inflated. F

I look forward to the correction of these deficiencies in the Final Plan.

Sincerely,

Al Wells

Al Wells

M-N-366

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B The Great Burn/Hoodoo, including the Irish Basin-Lower Cache Creek area, and Quigg Peak are recommended for wilderness is the Final EIS.

C The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

D In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

E Forest management requires road access for timber harvest, recreation and protection from fire, insects and disease. Forest roads and their construction can have impacts on soil, water and wildlife resources, but measures have been developed to provide protection of these resources during and after road system development. Specific descriptions of these measures can be found in the Lolo National Forest Plan, Forestwide Standard Nos. 16, 49, 50 and 52.

F The values per recreation visitor day (RVD) for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and the RPA program, as required by the Forest and Rangeland Renewable Resource Planning Act. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging and so forth to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

Timber values are based on actual market values for the time period 1976-81. The discount rate used in the Forest Plan is based on well-documented research concerning the real rate of return on low-risk, long-term investments. Sale-by-sale economic analysis is called for as part of the implementation of the Forest Plan. Monitoring of economic assumptions, particularly price trends, is also an important part of implementation and significant deviation from assumptions would trigger the need for a change in the Plan.

Since the construction of roads and growing of timber is a long-term investment, it must be analyzed for the long term. The Lolo's analysis indicates that the lands termed "suitable" are indeed economical to road and manage timber on while wildlife and recreational uses continue.

FOREST SERVICE
MAY 31 1985
RECEIVED

WM-N-367
(1 of 3)

Lolo Forest Plan Comments 5/25/85

Dear Mr. Daniels,

I disagree with Alt. D (Proposed Action) very much.

The Forest Plan Map for Alt. D has the Stony Mtn. (RARE II # 01 808) marked as 'H' indicating wilderness or proposed Wilderness which is incorrect. A

While mistakes in printing are to be expected, it is unfortunate that no 'errata' sheet was prepared to correct this mistaken impression for the at-large public.

I support Alt. B because of its management philosophy, Old growth habitat allocations, visual quality maintenance, protection of aquatic habitat and riparian zones, relatively low levels of road building, wilderness and Roadless allocations, and the recreational opportunities it provides. B Alt B also provides a good balance of Timber and other market resources to maintain employment and provides the same economic return as the proposed action (Alt D). The following changes should be made to improve Alt. B.

1. Recommend Stony Mtn (01-808) and Lolo Peak (01-805) for Wilderness; adopt Montana Wildlands Coalition boundries for Swan Front and Great Burn Wilderness recommendations; add area allocated to roadless along Monture Creek to Monture Creek Wilderness recommendation and recommend Wilderness for Cube Iron/Silcox as proposed by M.W.C. C

2. Allocate all of Marshall Peak roadless D

FOREST SERVICE RESPONSE

WM-N-367

A The Forest Plan Map did mistakenly identify Stony Mountain as proposed for wilderness (Management Emphasis h). The map has been corrected to recognize a majority of the area for roadless management.

B Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

C The Draft EIS reviewed 776,190 acres of roadless land. The Forest recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

A portion of Lolo Creek is recommended for wilderness designation. This is a change from the draft statement.

On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres respectively for the Lolo Forest.

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

D The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

WM-N-367
(2 of 3)

P 2

Lolo Forest Plan Comments 5/25/85

2 (cont) area to roadless management.

3. Change Alt. B allocation in McGregor-Thompson, Pat Knob-N. Cutoff, S Siegel-S cutoff, and N Siegel areas from roadless to Wildlife management emphasis. These changes will offset impact of recommendations in (1) and (2) above on non-roadle. allocations. These areas should be used primarily for Wildlife management emphasis, particularly Elk Winter Range, where appropriate. E

4. Roadless areas management prescriptions should require No Surface Occupancy stipulations for all new and re-issued mineral leases. F

5. Firewood cutting should be prohibited in old Growth management areas; seasonal road closures should be used to insure that unpermitted cutting does not happen. A minimum rotation age of 200 years should be standard. G

6. A reliable, Well Funded monitoring program should be in place before development proceeds. Such a program should use automatic Feedback to curtail development activities if funding for monitoring and/or mitigation is inadequate. Monitoring must be Timely, at least annually, and evaluated promptly. Levels of acceptable change should be scientifically documented. H Where research is lacking, it should be aggressively pursued and until such research data are available, applied resources activities whose impacts are uncertain should be scaled back. I

7. To the greatest extent possible, Avoidance rather than mitigation of environmental impacts should be practiced. J

FOREST SERVICE RESPONSE CONTINUED

E The management emphasis for the Pat's Knob-Cutoff and Siegel Creek areas is enhancement of wildlife, particularly big game winter range. The emphasis for the McGregor-Thompson area is management of timber and range.

F In Mountain States Legal Foundation v. Watt (1980), Federal Judge Brenmer declared that the Forest Service may not arbitrarily put blanket NSO (no surface occupancy) stipulations on roadless lands. During the formation of the Forestwide environmental assessment (EA) for oil and gas leasing, the Lolo resource specialists identified a number of special stipulations which would be added to leases issued in roadless areas to protect/mitigate any impacts. This listing of stipulations is included in MA 11 as part of the direction for managing the Forest's roadless lands.

G Firewood cutting in designated old growth areas is not considered a problem since these areas generally will not be accessible by road. Lands assigned for old growth management are scheduled on a double rotation basis. Depending upon the site productivity, the rotation period is currently established at 170 to 190 years. The primary function of old growth, however, is to produce an ecological condition, not necessarily any specific age.

H A good monitoring plan has been developed. Also monitoring needs are planned and implemented according to the level of development actvities planned for a given year. The monitoring program does provide for data evaluation and feedback as outlined in Figure V.1, Decision Flow Diagram in Chapter V, Section D, Lolo National Forest Plan.

I The research needs to fully implement the Forest Plan are included in Chapter II, Section C. Several research projects with similar needs are being conducted within the Lolo Forest or on similar Forest lands around the Region. The Forest Service concurs that research should be aggressively pursued and, where information on the effects of forest management is lacking, a cautious approach is necessary.

J The Forest designs projects, including roads, to avoid potential impacts and high risk situations. Mitigation measures are incorporated into projects to reduce unavoidable impacts to acceptable levels.

WM-N-367
(3 of 3)
P 3

Lolo Forest Plan Comments 5/25/85

8. Sediment yields are too high. Tractor skidding should be prohibited on slopes greater than 40%. The level of roading should be reduced. Road closures should be used more to reduce sediment yields as well as to provide for greater wildlife security. K

9. Overall, recreational values are under-estimated and timber values inflated. This must be corrected to protect all of our Forest resources! L

Jerry O. Nicholls

Jerry O. Nicholls
Box 466
Stevensville, Montana 59870

FOREST SERVICE RESPONSE CONTINUED

K Tractor skidding on steep slopes has been an ongoing concern during the planning process. The Lolo National Forest has placed special restrictions on tractor skidding land over 35 percent. All soils are treated with mitigation measures that consider the characteristics of the soil and attempt to minimize the particular hazard of each location (Best Management Practices [BMP's]). By using this kind of approach, areas can be developed with a minimum amount of sediment production. Road closures are used to protect watershed values and help reduce sediment production. Some closures are year-long while others are only seasonal, but both do their part to ensure that the watershed is protected.

L The values per recreation visitor day (RVD) for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and the RPA program, as required by the Forest and Rangeland Renewable Resource Planning Act. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging and so forth to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

Timber values are based on actual market values for the time period 1976-81. The discount rate used in the Forest Plan is based on well documented research concerning the real rate of return on low-risk, long-term investments. Sale-by-sale economic analysis is called for as part of the implementation of the Forest Plan. Monitoring of economic assumptions, particularly price trends, is also an important part of implementation and significant deviation from assumptions would trigger the need for a change in the Plan. The inability of the Forest to sell sales in recent years is considered to be a result of recession in the national economy rather than an indication of lower timber values.

M-N-369
(1 of 2)

FOREST SERVICE
LOLO NATIONAL FOREST

MAY 31 1985

RECEIVED

5/29/85
ORVILLE DANIELS
FOREST SUPERVISOR
LOLO NATIONAL FOREST

DEAR MR. DANIELS:

HAVING REVIEWED THE NEW LOLO PLAN DEIS, I WOULD LIKE TO COMMEND THE LOLO NATIONAL FOREST FOR IT'S SERIOUS APPROACH TO THE PLANNING PROCESS. MUCH OF WHAT IS LAID OUT IN THE PLAN APPEARS REASONABLE WITHIN THE CONSTRAINTS OF THE RPA PROGRAM OBJECTIVES.

I HAVE COMMENTS ON THE SPECIAL MANAGEMENT AREA ALLOCATIONS FOR 2 SEPARATE UNITS WITHIN THE FOREST; I BELIEVE THE PROPOSED ALLOCATIONS OF THESE AREAS SERIOUSLY COMPROMISE THE FOREST'S OBLIGATIONS TO WILDERNESS AND WILDLIFE RESOURCES.

A HOODOO (GBU, AKA THE GREAT BURN). VIRTUALLY ALL LOCAL GOVERNMENTS AND MONTANA ELECTED OFFICIALS AGREE ON THE DESIRABILITY OF PRESERVING THIS AREA AS DESIGNATED WILDERNESS. THE IRISH BASIN AREA SHARES THE WILDERNESS QUALITIES OF THE REST OF THE HOODOO UNIT - WHY EXCLUDE IT? THE CONFELL CREEK / CACHE CREEK DIVIDE IS THE MORE [illegible] RATIONAL BOUNDARY LINE. INCLUDE THE IRISH CREEK/CACHE CREEK DRAINAGE WITHIN THE HOODOO/GREAT BURN WILDERNESS, AS IN ALTERNATIVE "F".

B CUBE IRON/SILCOX. YOUR OWN DEIS, IN DESCRIBING THIS AREA, PROVIDES THE BEST STATEMENT IN FAVOR OF WILDERNESS DESIGNATION HERE. "SCENIC VALUES ARE MANY", AND "THE UNIT AFFECTED BY [THE] HUMAN INTRUSION", ETC. NEITHER THE LOLO FORCE NOR ANYONE ELSE IN THE REGION HAS DEMONSTRATED ANY GRIZZLY BEAR MANAGEMENT THAT IS MORE EFFECTIVE AND SECURE

FOREST SERVICE RESPONSE

M-N-369

A The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (including the Irish Basin-Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

M-N-369 (2 of

THAN WILDERNESS DESIGNATION. THE PROPOSED "WILDLIFE - GRIZZLY BEAR" ALLOCATION OF THE LOWLAND PORTIONS OF CUBE IRON-SILCOX APPEARS TO BE LIKELY INTENDED TO ALLOW TIMBER ACTIVITIES IN THE AREA. WILDERNESS DESIGNATION, AS IN ALTERNATIVE "[illegible]", IS THE BEST USE OF THE AREA'S UNCOMMON [illegible] VALUES AND THE SURE LONG TERM PROTECTION OF THIS ADMITTEDLY [illegible] GRIZZLY BEAR HABITAT. C

LOLO CREEK - THE WESTERN SADDLE/CARLTON RIDGE AREA PROPOSED AS MANAGEMENT AREA "[illegible]", ROADLESS, SHOULD BE ADDED TO THE SELWAY BITTERROOT. I HAVE BEEN ON AND AROUND LOLO PEAK ON A NUMBER OF OCCASIONS, AND I BELIEVE THE EIS OVER-STATES THE LEVEL OF HUMAN INTRUSION IN THE AREA. ADDING THIS AREA TO THE EXISTING WILDERNESS IS THE BEST WAY TO ASSURE THAT FURTHER ENCROACHMENTS ON THE SELWAY-BITTERROOT'S NORTHERN BOUNDARY ARE MITIGATED. I DO NOT BELIEVE THE AREA IS SUITABLE AS A DISPERSED SKI AREA. ROADLESS. D

STONY MOUNTAIN - I AM CONFUSED AS TO EXACTLY WHAT IS PROPOSED HERE. THE EIS MAP FOR THE PROPOSED ALTERNATIVE SHOWS THIS AREA, C 808, AS PROPOSED WILDERNESS, WHILE THE MAP ACCOMPANYING THE ROCK CREEK ADDENDUM SHOWS THE STONY MOUNTAIN AREA AS MANAGEMENT CATEGORY 'C'. WHATEVER THE ANSWER TO THIS APPARENT INCONSISTENCY, THE EIS MAP DISPLAYS THE RIGHT SPIRIT - STONEY MOUNTAIN SHOULD BE RECOMMENDED FOR WILDERNESS DESIGNATION. BY DOING SO, THE FOREST WOULD AVOID INEVITABLE CONFLICTS WITH THE ROCK CREEK FISHERY, AT LEAST IN THIS AREA AND EFFECTIVELY PROTECT THE AREA'S WILDLIFE POPULATIONS. THE SAPPHIRES MAY BE HEADED FOR THE AXE; THE STONY MOUNTAIN BLOCK SHOULD BE PRESERVED AS WILDERNESS. E

AS A FREQUENT LOLO FOREST USER, I HOPE MY COMMENTS ARE TAKEN UNDER SERIOUS ADVISEMENT.

SINCERELY,
Mark D. Shapley
MARK D. SHAPLEY
333 FAIRVIEW
[illegible]

CC: SENATOR MAX BAUCUS
SENATOR JOHN MELCHER
[illegible]

FOREST SERVICE RESPONSE CONTINUED

C Concerning the management for grizzly bears in the Cube Iron-Silcox area, research has shown that when security is provided, grizzlies make use of early successional stages of forest habitat types that have an abundance of bear food plants. The absence of fire has resulted in advanced successional stages that are heavily forested and lack primary bear foods. Timber harvest can replace the role of wildfires in returning an area to an early successional stage, thus maintaining bear foods with proper treatment, placement, size and timing of vegetative manipulation. The problem that arises is the loss of security or protection from direct mortality that occurs when access is provided in these areas. Management Area 20 was developed to provide enhancement of grizzly bear habitat where use of fire was unacceptable. Maintenance and enhancement of the habitats are the only acceptable activities that can occur within this allocation. Bear security will be provided during their use periods via road closures, limiting timing of management activities and other restrictions as conditions warrant.

D A portion of Lolo Creek is recommended for wilderness designation in the Final EIS. This is a change from the Draft statement.

E In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

FOREST SERVICE
LOLO

MAY 31 1985

RECEIVED

WM-N-370

Lolo Creek Road
Lolo, MT
59847

Forest Planning Team
Lolo National Forest
Missoula, MT.

Dear Mr. or Ms.

I am recommending that you use your planned alternative B as A
a preferred alternative. This plan would encompass what I feel
helps preserve as much of the wilderness character of the Forest
as possible. I know that it might sound like a ditioed Wilderness
Freak's response, but I can assure you, that it isn't. I have
gone through four years at a Forestry school and have learned how
fragile the Rocky Mountain region is for any kind of timbered harvest.. B
I have been on planting crews, and stand improvement crews and
know now from first hand experience that Forestry as we know it
today in this part of the country ~~much~~ must be slowed and hopefully
charged. There is a terrible return on what timber we do set up C
for purchase, in fact there is a loss in a lot of cases.

To start the redirection of the Forest Service on a new course D
I feel that we must preserve first the remaining areas of wilderness
we have in the area. Then we must adapt some different ideas of
sustained yield in this area for our timber production.. With Alt.
B as a start, this may someday become a reality.

One last thing........ This Revised Lolo Forest Draft EIS
that was issued, I did try to read, but found that it was so involved
and complicated, that I did not have enough time to adequately go E
through the entire document. I personally feel that the time alloted
for the public was far too short, as there were various other plans
to comment on too.

Sincerely,

John Crawford

FOREST SERVICE RESPONSE

WM-N-370

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

B The Forest Service recognizes that a cautious approach is necessary where information on the effects of forest management is lacking. The research needs to fully implement the Forest Plan are included in Chapter II, Section C. Several research projects with similar needs are being conducted within the Lolo Forest or on similar Forest lands within the Region.

A good monitoring plan has been developed. Also monitoring needs are planned and implemented according to the level of development actvities planned for a given year. The monitoring program does provide for data evaluation and feedback as outlined in Figure V.1, Decision Flow Diagram, in Chapter V, Section D, Lolo National Forest Plan.

C In some cases, particularly during the initial sale entry into an unroaded area, the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

D The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

E The Forest recognizes the large amount of material contained in the EIS and its technical nature. The documents have been supplemented with an "overview" in hopes of making it faster or easier for people to use for deriving comments. While in one sense, the documents are created to comply with laws and regulations, suggestions are welcomed for making the documents simpler and easier to understand.

Although the time for review is limited, this is the third time public review has been requested of the Lolo Forest Plan and extensions have been allowed to encourage public response.

M-N-373

FOREST SERVICE
LOLO N...
JUN - 1 1985
RECEIVED

Forest Supervisor
Lolo National Forest
Fort Missoula
Missoula, MT 59801

5-30-85

Dear Sir:

In regard to the Draft Lolo Forest Plan, I have the following comments:

1) Rock Creek
proposal
In addition to Quigg Peak area/for wilderness, I want to see the Lolo side of the Stony Mtn roadless area proposed for wilderness, or at a minimum, kept roadless. I think it is a very beautiful area. A

2) Great Burn
I have hiked, cross country skiied, and snowmobiled some of this. Cache Creek/Irish Creek Basin needs protection. It integrates ideally with the proposed wilderness areas south and north of it. I am not adamant about this Basin being wilderness but it must remain roadless. B

3) Cube Iron - Mt. Silcox
The proposal for helicopter logging may be acceptable protection. I do not know the area. But my opinion is that we are not yet too long on wilderness, and that this roadless area should be considered for wilderness. C

4) Increased logging roads
Something is awry in the directives for the Forest Service. The proposals for future roads are not demonstrably supported - not in the quantity as recommended. Cut, cut, and cut some more from the proposals. D

Sincerely,

David Line
1135 Whitaker Dr.
Missoula, MT 59803

FOREST SERVICE RESPONSE

M-N-373

A In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

B The Great Burn is recommended for wilderness in the Final EIS, including the Irish Basin-Lower Cache Creek portion.

C The FEIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000) will remain roadless within the next ten years.

D Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards,,to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

M-N-378
(p. 1 of 3)

JUN - 1 1985
RECEIVED

RESPONSE TO THE FOREST PLAN

As outlined in Recreational Management Concern #2 on page S-2 of the proposed plan, there is a need for more coordinated planning for metropolitan area recreation. Initial input for the preparation of this plan should come from individuals and groups most affected by the management of the area.

The following is a list of concerns for the Blue Mountain Recreation Area:

1. Cows are grazed for too long on lower Blue Mountain, especially at the rifle range area at the bottom. Rotating the cows to different ranges would help. Overgrazing encourages the influx of noxious weeds. This is very obvious along portions of Lower Blue Mountain Road. A
2. Motorcycle trails and surrounding area are fast becoming an over-used, unmanageable eyesore which contributes to soil erosion and poorer water quality of Hayes Creek. B Some of this is caused by technical advances in motorcycles. The trails that used to adequately test the skills of most riders and cycles are now insufficient. Therefore, the riders have established their own hill climbs and trails to test their abilities. Some of the roads or trails allow the riders to obtain speeds that are dangerous to the general public walking in the area.

FOREST SERVICE RESPONSE

M-N-378

A The Blue Mountain Recreation Area has been impacted by cattle grazing. As a result, no cattle were grazed in 1985 and the management plan for this allotment is now under revision. One purpose of the new range plan will be to control livestock numbers so repeated overgrazing does not occur. While heavy grazing can cause an increase in noxious weeds, much of the problem comes from road construction. Heavy grazing and road construction provide a seedbed for noxious weeds. Once disturbed by overgrazing, noxious weeds can invade grasslands.

B Both motorized and nonmotorized recreation are legitimate uses of the Forest, but the uses often conflict when they occur in the same vicinity. To avoid conflict, an attempt is made to separate users. When users ignore areas or trails designated for their use, illegal shooting goes on, off-road vehicle use occurs and the Forest has an enforcement problem. The Forest finds "sacrifice areas" and illegal shooting unacceptable. However, decreased budgets have limited maintenance and enforcement activities. Therefore, the Forest is working with a local motorcycle club which is promoting self-policing and performing some maintenance work.

M-N-378
(2 of 3)

Another part of the problem is the almost total lack of trail maintainance, signing and law enforcement.

It should not be the Forest Service's responsibility to provide a sacrifice area for motorcycles, especially in an area set aside for concentrated public use, so close to Missoula. Ten years ago, when motorcycle trails were laid out in this area, the level of use in the area was much less than its present use. It was also the era of YACC and YCC employees who spent a lot of time on trail maintainance. But that time has passed, and because of cuts in funding, I cannot foresee the management of this activity improving. The present direction is certainly not consistent with the management goals in the proposed forest plan. C

3. The present management plan prohibits shooting within one mile of the private land and main concentrated use area of Blue Mountain. While I wholeheartedly agree with this, very little is done to insure that this is enforced. Proper signing and increased enforcement would make the public more aware of the regulations. D

4. I am opposed to the Army's use, or rather misuse, of the lower Blue Mountain area. It is inconceivable that the Army's increased plans could possibly fit in to any recreational use of Blue Mountain. The Hayes Creek Homeowners' Association's letter addresses my basic concerns and should be referred to for any other comments on this issue. E

FOREST SERVICE RESPONSE CONTINUED

C The Blue Mountain Recreation Area is intended to provide diverse recreational opportunities. Since the motorcycle trail complex is the only one of its kind in the area, the Forest plans to continue its use and to encourage proper use. A recreation plan is needed for Blue Mountain. If budgets allow, a plan will be prepared and become an amendment to the Forest Plan.

D Proper signing is provided in the area; however, there is a high rate of vandalism making it difficult to keep signs in place. Forest personnel patrol the area, but the Forest does not have the number of people available which would be required to patrol all of the time, therefore a cooperative agreement exists with the Missoula County Sheriff to provide additional patrol time in the area.

E The Forest is currently cooperating with the United States Army on the management of the lower Blue Mountain area. A 1952 Executive Order allows the Forest Service to manage the area for surface uses while providing the Army full use of the area for training exercises. We will continue to work with the Army to manage the Blue Mountain area for recreational purposes.

M-N-378
(3 of 3)

These concerns are not an overreaction because I live near the Blue Mountain Recreation Area, but rather because of a greater awareness of growing problems that will affect the unique qualities of the area.

Thank you for the opportunity to comment on the forest plan.

Sincerely,

Peter B. Odegard
7385 Beryl Lane
Missoula, MT 59801

WM - N - 380

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
JUN - 1 1985
RECEIVED

montana
EARTH FIRST!

mr. daniels, —
in regard to the plan
for future management of the
lolo nat. forest, i support no roads in
the remaining roadless areas! & a freeze A
on the current road mileage. also no B
ill effects to the water quality of the C
clark fork, bitterroot rivers, rock creek
& the blackfoot. no reduction of the
old growth stands or their dependent D
wildlife, conservation of these "public"
lands: the swan front, marshall pk.,
clearwater-monture, quigg pk. & stony
mtn., cache cr. & irish basin, hoodoo, E
cube iron mt. silcox. no logging of the
cube iron-silcox, a 40,000 acre wild-
erness instead! also to include the "lolo
side" of stony mt. as wilderness.
why do you insist on increasing
logging roads when you've only been F
able to sell 1/2 of the timber offered
for sale in the past 5 yrs? it's past
time that you start paying attention
to what the public wants & what
the land needs, rather than these
mis-lead needs of the forest service.
very sincerely,
martha stammers
box 75
charlo, mt.
Charlo 59824

FOREST SERVICE RESPONSE

WM-N-380

A Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

B Although the Forest Plan prescribes an increase in miles of road built, miles of road open to traffic will change very little from the current situation.

C The Lolo Forest has shown in Forestwide Standards No. 14 through 20 what steps will be taken to protect the water quality. They explain the items that will be monitored and how degradation will be determined. These standards are fairly stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. The Forest will also work with private landowners to protect watersheds by following Forestwide Standard No. 14.

D Maintenance of old growth stands and habitat for old growth dependent species is provided in roadless and wilderness areas and in old growth allocation, MA 21. In the issue analysis phase of planning, it was determined that the public had strong feelings about maintaining viable populations of all species of wildlife including old growth dependent wildlife. Few individuals, however, expressed an interest in maintaining existing levels of old growth dependent species. The cost of maintaining existing levels of old growth would have involved reductions in big game populations, timber harvest-related jobs, and dispersed recreation. Viable populations, on the other hand, can be maintained with a minimal impact on other resource outputs. For this reason, all alternatives have provisions for maintaining viable populations of old growth dependent wildlife.

E On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres respectively for the Lolo Forest.

The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

FOREST SERVICE RESPONSE CONTINUED

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

F The inability of the Forest to sell sales in recent years is considered to be a result of recession in the national economy rather than an indication of long-term market demand. As market conditions improve and timber reserves on private lands become depleted, the volume of offered timber sold and harvested on the Forest will increase.

WM- N - 388

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name Gene R Winge
Address 14020 Hampton Drive
Turah, Mt 59825
Organizational Affiliation ____
________________ (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
JUN - 1 1985
RECEIVED

Dear Sir!

After several hours of study on your (RDEIS) Plan i Find None of your Forest Plans completely suitable to me. However i must voice my opinion on Two Subjects.

Montana has enough wilderness area at This Time. Please No more wilderness! A

The Forest Service has more Than enough roadless ares now as it is impossible For most people to walk 10 or more miles To hunt Let alone pack out game. Also older or crippled people cannot use woods at all This is Unconstitutional in my opinion. The Montana Fish WildLife & Parks should not have The power To Force The Federal Government into roadLess areas. B

Sincerely Yours

FOREST SERVICE RESPONSE

WM-N-388

A Of the remaining 776,200 roadless acres on the Forest, 371,900 could be developed under the Forest Plan. Wilderness recommendations and other land allocations are based on analysis of public resource demands, ecological values and the capability of the land to provide goods and services.

B Although wilderness travel is often difficult and not practical for most disabled or elderly people, the Forest works to accommodate their needs in other areas outside of wilderness. Forestwide Standards Nos. 6 and 7 emphasize providing recreation activities and sites to a wide segment of society, including the handicapped and elderly.

M-N-392
(1 of 6)

1833 S. 14th W.
Missoula, MT 59801
June 1st, 1985

Orville Daniels - Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONT.
JUN - 1 1985
RECEIVED

Dear Mr. Daniels;

I support Alternative B because of it's management philosophy, old growth habitat maintenance, visual quality objectives, protection of aquatic resources and riparian zones, relatively low level of road construction, Wilderness and roadless allocations, and the recreational opportunities it will provide now and in the future. A

Alternative B also provides a good balance of timber harvest and other market resources to maintain employment, and has the same economic return as the proposed action (alternative D). I urge you to adopt alternative B as the preferred alternative with the following changes in land allocations.

Wilderness Recommendations

1) Recommend Stony Mtn (01808) and Lolo Creek (01805) for Wilderness, change management emphasis from F to H. B

2) Great Burn (Hoodoo 01301) Wilderness recommendation should be expanded to include Packers Gulch and all of the Irish Basin as proposed by the Montana Wildlands Coalition. The Schley Mtn road, 7734, should be closed and obliterated from it's junction in section 9, T12N, R25W to it's upper end. C

FOREST SERVICE RESPONSE

M-N-392

A Alternative d was selected as the preferred alternative for the Forest. This selection is based upon an analysis of public resource demands and the capability of the land to provide goods and services. Alternative d provides for the enhancement of resource values on wilderness and roadless lands as well as on lands that will be developed. Lands determined to be suitable for timber will also be managed to meet other resource goals.

The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

B In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

The Final EIS recommends a portion of Lolo Creek for wilderness designation. This is a change from the draft statement.

C The Packers Gulch area is allocated to Management Areas (MA's) 18 and 19, which emphasize big game winter range. MA 19, including the lower end of the gulch, is considered unsuitable for timber production. Past timber harvests and roads have diminished the wilderness character of the area.

In response to public comments, the Irish Basin-lower Cache Creek area is recommended for wilderness.

According to the current Lolo Travel Plan, the uppermost end of Schley Mountain Road #7734, in Section 19, is closed year-round to automobiles and motorcycles and from Oct. 15 to Nov. 30 to snowmobiles. The road was constructed to provide access for mineral exploration, and the mining claim is still valid. The environmental costs of obliterating and closing the road, with the potential of having to re-open it for mining purposes, would be high.

page 2

M-N-392
(2 of 6)

3) Adopt the MWC boundaries for Swan Front (01485) addition to Bob Marshall Wilderness. That is as recommended in Alternative B plus all adjacent B and F management areas from Morrel Lake northward within the inventoried roadless area. D

4) Monture Creek (01485) addition to Bob Marshall, as in Alt. B; plus adjacent roadless lands along Monture Creek and over to Morrel Mtn allocated to management emphasis F, change to H.

5) Wilderness should be recommended for Cube Iron/Silcox roadless area (01784) with boundaries as proposed by the MWC. E

Roadless Recommendations

1) Teepee-Spring Creek boundary (01786) should include all of Bay State Cr and Buckeye Canyon Drainages in addition to Alt. B ME F allocation. F

2) Cherry PK. (01791), F allocation should be expanded to include all of Cherry Creek within inventoried roadless area. G

3) Sheep Mtn (01799), close and obliterate primitive road (2092) beyond Mink PK., include area in F allocation. H

4) Ward Eagle (X1220), close and obliterate primitive road (16170) up Beer Creek beyond junction in section 22, include area in F allocation. I

5) All of Marshall PK. (01751) roadless area should be allocated to management emphasis F. J

6) Burdette Cr. (01803), entire Burdette and Lupine Creek drainages should be allocated to F. K

7) Petty Mtn (X1202) and Deep Cr (X1814), primitive road L

FOREST SERVICE RESPONSE CONTINUED

D On the Swan Front and Monture areas, recommendations for wilderness are for 3,690 and 65,560 acres, respectively, for the Lolo Forest.

E The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next ten years.

Status in alternative d, the preferred alternative, of the other areas mentioned:

F Teepee-Spring Creek - There will be no change in boundaries. Approximately 9,700 acres will be managed under Management Emphasis C (wildlife - other). Most of the remaining area will be managed for timber/range and miscellaneous emphases.

G Cherry Peak - The major Management Emphasis will be F (roadless), involving 20,173 acres. About 11,000 acres will be managed for timber/range.

H Sheep Mountain - No. 2092 was closed as a road several years ago and has since been used as a trail. The road to Mink Peak, #7829, is open during the summer, with an Oct. 15 to June 15 closure. Management Emphasis F (roadless) is recommended for 20,880 acres, which is about one-half of this area.

I Ward Eagle - Road #16170 is closed year round. Its maintenance is required for resource management. Approximately two-thirds of the area (5,731 of 8,570 acres) will be managed as roadless under Alternative d.

J Marshall Peak -The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management. All of the area will remain roadless in the first decade.

K Burdette Creek - All but 1,049 acres of this 16,360-acre area will be managed for the grizzly bear and other wildlife. Under this management direction, fire would be the primary tool for management.

L Petty and Deep Creek - The decision to keep primitive road #1706 open was made via the public involvement process of the Travel Plan, as it provides recreational access along the ridge route tying in with Blue Mountain Recreation Area. Your letter has been forwarded to the district, and the comments will be considered in the next Travel Planning process.

M-N-392
(3 of 6)

(17806) should be closed beyond Telephone Butte and the two areas managed as one. L

All other roadless areas should be allocated as proposed in Alt. B except that the roadless allocations for McGregor Thompson (LILAG), Mt. Baldy (X1209), Pat Knob-N. Cutoff (01794), S. Siegel-S. Cutoff (01795), and N. Siegel (01796) should be changed to offset the affect of the above changes in Wilderness and roadless allocations on other allocations However these areas should be primarily allocated to wildlife management emphasis, particularly elk winter range where appropriate. M

Standards and guidelines for MA 11 should read as follows for Minerals:

"Areas not currently leased will be withdrawn from mineral leasing, existing leases will not be renewed when they expire. Areas will also be withdrawn from any further hardrock mineral claiming, existing claims will be checked for validity. Any exploration or development permits issued under valid existing claims or leases will contain no surface occupancy stipulations." N

Firewood cutting should be prohibited in areas managed for old growth; seasonal road closures should be used to insure that unpermitted cutting does not occur. A minimum rotation age of 200 years should be standard for old growth. O At least 10% of the non-wilderness forest should be

M The management emphasis for the Pat's Knob-Cutoff and Siegel Creek areas is enhancement of wildlife, particularly big game winter range. The emphasis for the McGregor-Thompson area is management of timber and range.

N For existing mining claims, neither the 1872 Mining Law nor the Forest Service regulations allow imposition of a NSO (no surface occupancy) requirement in development plans. The Bremner Decision, 1980, (Mountain States Legal Foundation v. Watt) declared that the Forest Service may not arbitrarily issue blanket NSO stipulations on mineral leases in roadless areas. FSM 2818.3 states that the use of validity examinations on unpatented mining claims is limited to the following three situations:

1. Patent applications filed by the claimant.
2. Claims used for purposes not authorized by the mining laws.
3. The land is needed for a Federal Program.

Wholesale withdrawal of Federal lands from mineral entry and leasing runs counter to the intent of the Federal Land Policy and Management Act (FLPMA) of 1976. Section 204 of this legislation lists the administrative requirements and standards which must be met before a proposed withdrawal may be effected. The Lolo National Forest established a list of criteria against which proposed withdrawals are evaluated (Appendix H, Lolo Forest Plan). Individual sites or small areas which meet this test will be recommended for withdrawal. Because an area is roadless does not automatically qualify it for withdrawal.

O Firewood cutting in designated old growth areas is not considered a problem since these areas generally will not be accessible by roads. Lands assigned for old growth management are scheduled on a double rotation basis. Depending upon the site productivity, the rotation period is currently established at 170 to 190 years. The primary function of old growth, however, is to produce an ecological condition, which is what we are predicating the management of these on, not necessarily any specific age parameter.

page 4

M-N-392
(4 of 6)

managed as old growth.

All management activities should be contingent upon
adequate funding for proper monitoring, and mitigation of
impacts where called for. If funding levels are inadequate
to complete proposed mitigation measures, or if monitoring P
shows mitigation to be insufficient, then the management
activities causing the impacts should be automatically
cutback enough to offset the shortfall in funding for, or
sufficiency of, the mitigation efforts.

Monitoring must be timely and evaluated promptly. Levels
of acceptable change should be scientifically documented. Where Q
research is lacking it should be aggressively pursued, and
until such research data are available resource activities whose
impacts are uncertain should be deferred. To the greatest R
extent possible avoidance rather than mitigation of adverse
environmental impacts should be the practice.

In general recreational values are underestimated and
timber values inflated, thus wrongly favoring more market
oriented alternatives over alternative B. In particular the S
extent and value of the Lolo's contribution to fishery
resource in Western Montana has been grossly underestimated.
Future timber values are overstated by use of optimistic price
assumptions and unrealisticly low discount rate of 4 percent.
Hopefully sale by sale economic analysis will be used to modify or T
reject uneconomic sales. I am concerned however that the
Lolo, if it uses such criteria, will find itself in the future

FOREST SERVICE RESPONSE CONTINUED

P A good monitoring plan has been developed. Also monitoring needs are planned and implemented according to the level of development actvities planned for a given year. The monitoring program provides for data evaluation and feedback as outlined in Figure V.1, Decision Flow Diagram, in Chapter V, Section D of the Lolo National Forest Plan.

Q The research needs to fully implement the Forest Plan are included in Chapter II, Section C. Several research projects with similar needs are being conducted within the Lolo Forest or on similar Forest lands around the Region. The Forest Service concurs that research should be aggressively pursued and, where information on the effects of forest management is lacking, a cautious approach is necessary.

R Projects on the Forest, including roads, are designed to avoid potential impacts and high risk situations. Mitigation measures are incorporated into projects to reduce unavoidable impacts to acceptable levels.

S The value of a recreation visitor day (RVD) for the different types of recreation, including fishing, is based on willingness to pay (WTP) values. These values were determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and RPA. An explanation of why the WTP values appear low and what it represents is warranted. WTP values estimate what the recreationist would be willing to pay at the point of use. In the case of an angler vistor day, point of use is on the stream, ready to fish. Money spent elsewhere on fishing, such as for travel, lodging and fishing gear, is not included in the WTP values.

The value of fishing to the local economy is calculated in a different analysis, called an impact analysis. Input-output coefficients are used to determine the impact of recreation activities on the local economy in terms of jobs and income. This analysis was also used in the preparation of the Forest Plan.

T Timber values are based on actual market values for the time period 1976-81. The discount rate used in the Forest Plan is based on well documented research concerning the real rate of return on low-risk, long-term investments. Sale-by-sale economic analysis is called for as part of the implementation of the Forest Plan (see Forestwide Standard No. 11). Monitoring of economic assumptions, particularly price trends, is also an important part of implementation and significant deviation from assumptions would trigger the need for a change in the Plan. The inability of the Forest to sell sales in recent years is considered to be a result of recession in the national economy rather than an indication of lower timber values. However, timber values will be monitored in the future to make sure this assumption is correct.

117-N-392.
(5 of 6)

having to violate non-declining even-flow because it deferred uneconomic, low quality timber to future sales only to find their value did not appreciate as expected. Meanwhile more valuable timber will have been harvested at too great a rate. Economic assumptions must be re-evaluated periodically, every five years, particularly assumptions of price trends and discount rates, these should be subject to sensitivity analysis also, to determine how crucial they are management decisions. The inability to sell a good portion of the offered sales in recent years is indicative of true timber values being less than are currently being used and how assumptions can fail. T

The following comments are in regards to the DEIS.

1) In Appendix C it is impossible to determine alternative allocations for areas which overlap forest boundaries. For example take roadles area C1141, Maple Pk, is it allocated as indicated in column 5, pg C-25, or as in columns 7,10,11, or 12? These columns do not agree as to their allocations to timber/wildlife management emphasis, which column(s) are accurate for Lolo alternative F? U

2) Wonderful Pk (C1152) is contiguous with Stevens Pk (C1142), they should be considered as one area for possible Wilderness or roadless management. This is but one example. V

FOREST SERVICE RESPONSE CONTINUED

U With roadless areas that overlap onto more than one Forest, it can be confusing where different Forests' alternatives are merged to provide a picture of management for the entire roadless area. On the example of Maple Peak, the preferred alternative is in column 11, as indicated at the bottom of Table 2.

V Wonderful Peak and Stevens Peak are not considered as one roadless area because the areas are separated by a road.

page 6

M-N-392
(6 of 6)

3) Why is the maximum Wilderness benchmark K of 624,460 acres less than the inventoried roadless acreage of 776,190 acres. W

4) In Tables II-3, 4, 5, 8 does roadless management acres mean just roadless non-wilderness or does it include wilderness acres also? If it means the former as I suspect then why does figure II-8 show zero Wilderness acres? Are you considering declassifying Wilderness or is it a mistake (I hope). X

5) Should be consistent in display of [illegible] total budget figures for each alternative, either M$ or MM$, whichever you prefer but be consistent. Also are all figures in 1978 dollars? All dollar figures should be in constant dollars and the base year clearly stated and used consistently. Y

6) Lastly your range of alternatives could use an alternative in the gap between F and G. Z

I hope you will give these comments and suggestions your serious consideration in developing the final Forest Plan, thank you for this opportunity to comment on your proposal.

Sincerely
Don A. Essig
Don A. Essig
1833 S 14th W
MSLA MT 59801

FOREST SERVICE RESPONSE CONTINUED

W The maximum wilderness benchmark, K, considered the entire roadless acreage for wilderness (776,190 acres). The reference to 624,460 acres was a typographical error.

X Figure II-8 (FEIS Chapter II, Section B2b(6)) shows zero acres of wilderness since the benchmark analysis did not include any area as wilderness to examine the total potential of the Forest.

Y The Tables were clarified to read "(MM - 1978 dollars)".

Z Although an alternative between f and g could be formulated, a judgement about some of the outputs and tradeoffs could be made by comparison with existing alternatives and benchmarks.

COMPOSITE PUBLIC COMMENT

WM-N-393-Mrs. Leonard Sargent M-N-408-Jim Bonnicksen

These two people expressed similar sentiments in that they would like to show support for wilderness protection on the following areas: A

Keep the Great Burn area whole and include the Cache Creek/Irish Basin in it.

Cancel plans for logging Cube Iron-Mt. Silcox and support instead the proposal to conserve a 40,000 acre wilderness there. B

Support the Quigg Peak recommendation and support wilderness for the Lolo side of Stony Mountain for wilderness. C

Drastically reduce the proposals for increased roading on the forest - these produce not only appalling costs for the taxpayers but have unacceptable impacts on wildlife, habitat, watershed quality, fisheries and wilderness recreational opportunities. D

FOREST SERVICE RESPONSE

WM-N-393 M-N-408

Of the areas of concern that are on the Lolo Forest:

A The Great Burn/Hoodoo is recommended for wilderness, including the Cache Creek-Irish Basin addition.

B The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

C In the Quigg roadless area, 60,830 acres have been recommended for wilderness. In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period.

D Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

Road costs may appear to be excessive compared to timber sale revenues from the first sale in an unroaded area. However, roads built for the first sale will be used to access several future sales as well. An accurate appraisal of road costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits, such as improved wildlife forage or community stability, justify a timber loss.

The Forest has shown in Forestwide Standard Nos. 14 through 28 what steps will be taken to protect the water quality of the Lolo. They explain the items that will be monitored and how degradation will be determined. These standards are stringent and will continue the implementation of Better Management Practices on the Forest. Because of the continued implementation of these practices, a long-term positive effect in those areas with sensitive soils will be noted. The Forest will also work with private landowners to protect watersheds by following Forestwide Standard No. 14.

M-N-394

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name Alice H Austin
Address 4741 Sundown Rd
Missoula, MT 59801
Organizational Affiliation ____________ (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

The Forest Service alternatives cannot cover all possibilities - I could not endorse any of them - Alternative F (#6) reads well, but obviously won't be accepted as practical because it does not allow for Montana's emphasis on big game hunting. (It would allow winter range to drop to 67% of the existing situation). I would be interested in seeing a version of Alternative F which would provide for planned burns in the 11% of the roadless land suggested for roadless management and/or in the 41% of the roadless acres to be made available for development - the purpose of such planned burns to provide adequate wintering range - A

I oppose extension of roads into roadless areas - B

I endorse the proposals of the Montana Wildlands Coalition - C

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
JUN - 1 1985
RECEIVED

Alice H. Austin

FOREST SERVICE RESPONSE

M-N-394

A Changing Alternative f to provide for more burning on big game winter ranges would increase big game populations. However, the alternative has not been revised because the current mix of roadless and wilderness allocations in Alternative f was designed to fulfill a public need for roadless recreation. While prescribed burning for winter range enhancement does not require roads, as described in Management Area (MA) 19, this activity was considered unacceptable by the public who wanted the roadless recreation. Roadless management does not preclude prescribed burning to meet other resource needs; but, since the allocation was designed to provide remote types of recreation without the intervention of humans, no funds were programmed for this activity.

B Forest management requires road access for timber harvest, recreation and protection from fire, insects and disease. Forest roads and their construction can have impacts on soil, water and wildlife resources, but measures have been developed to provide protection of these resources during and after road system development. Specific descriptions of these measures can be found in the Lolo National Forest Plan, Forestwide Standard Nos. 16, 49, 50 and 52.

C The Lolo Plan recommends 223,600 acres of wilderness compared to the 130,000 acres now existing. In addition, there would be more than 171,000 acres managed as roadless and about 24,000 acres as grizzly bear habitat. The Lolo believes these allocations provide adequate protection for the high wilderness and roadless values on the Forest.

NY- N-396
2 MAY 1985

RESPONSE FORM
Revised Draft Environmental Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name MICHAEL V. COLAVITO
Address 21 MAPLE AVENUE
CHAPPAQUA, N.Y. 10514
Organizational Affiliation ____
____ (if any)

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LOLO NAT'L FOREST,

THANK YOU FOR THE OPPORTUNITY TO COMMENT.

ATTACHMENT A: THE NEW GOAL ADDED TO THE LIST OF LONG-RANGE FOREST GOALS IS VERY GOOD AND [illegible]. THE CHANGES TO MANAGEMENT DIRECTION FOR M.A. 20 AND 20A SEEM ADEQUATE AND CLEARER. THE EXPLANATIONS ON P. IV-9 AND IV-10 OF THE RDEIS ARE VERY GOOD.

WILDERNESS: ALTERNATIVE 6 OR ONE NEW ONE THAT INCLUDES AS A MINIMUM THE FOLLOWING ROADLESS AREAS FOR WILDERNESS DESIGNATION:

STEVENS PEAK	01142
PETTY MTN.	X1202
HOODOO	01301
MEADOW CREEK	01302
BEAR-MARSHALL-SCAPEGOAT-SWAN	01485
CATARACT	01665
MARSHALL PEAK	01781
CUBE-IRON	01784
TEPEE-SP. CK.	X1786
SHEEP MTN.	01799

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
JUN - 1 1985
RECEIVED

THE RDEIS WAS VERY WELL WRITTEN AND COMPLETE.

SINCERELY,
Michael Colavito

FOREST SERVICE RESPONSE

NY-N-396

The management emphasis for Stevens Peak (01142) is roadless recreation and minimum level management. The Idaho Panhandle National Forest is the lead Forest for this roadless area.

In the Petty Mountain area (x1202), nearly 13,000 acres will be managed as roadless.

Wilderness is recommended for 81,900 acres of the Hoodoo area (01301) on the Lolo.

Meadow Creek-Upper North Fork (01302) will be managed as roadless area.

The primary management emphasis for the Lolo portion of the Bear-Marshall-Scapegoat-Swan (01485) is wilderness.

The Lolo Forest's portion of the Cataract (01665) will be managed primarily as roadless through the Plan period.

The Marshall Peak roadless area will have 2,776 acres allocated for grizzly bear habitat and 587 acres for roadless management.

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area (01784); 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

Teepee-Spring Creek (01786) will not be recommended for either wilderness or roadless management because of its history of mining activity, indefinite boundaries and moderate value for recreation or wilderness.

In the Sheep Mountain area (01799), 20,888 acres are allocated for roadless management and 10,509 acres for timber and range.

M-N-403

FOREST SERVICE
JUN - 4 1985
RECEIVED

224 E. Spruce
Missoula, MT 59802
June 4, 1985

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Building 24 Fort Missoula
Missoula, MT 59801

Dear Mr. Daniels:

Consider these as formal comments to your forest plan. I am distressed by your intended management direction for Burdette Creek. This RARE II area, number 01803 contains some of the finest elk winter habitat on the forest. It also contains a stunning stand of old growth larch and pine along the valley floor.

It was with extreme dismay that I noticed that you do not intend to manage this area for its roadless qualities. I read designation C, "Other Wildlife" as nothing more than a sham to allow timber harvesting. If you are concerned with managing this area for wildlife (and you should be), then simply leave it alone. What the elk need is secure habitat, not "improvements" through timber harvesting.

A

I urge you to remove this land from the forest's timber base and manage it as roadless. Any logging in this area will be hotly contested by the many concerned hunters who relish this area.

I also request that you put me on your mailing list for any E.A. pertaining to this roadless area. Thank you for your concern in these matters.

B

Very truly yours,

Jack Tuholske

FOREST SERVICE RESPONSE

M-N-403

A Most of the Burdette Creek area is allocated to Management Area 19, which has the goals of optimizing deer, elk and sheep winter range and providing opportunities for dispersed recreation. The Forest's intent is to manage the area for wildlife without timber harvest or road construction. Fire is to be used as a management tool. This land is not included in the Forest timber base, except for a small area in Lupine Creek where timber harvest will be allowed to benefit wildlife.

B A copy of your letter has been sent to the Ninemile District so you will be included on their mailing list for any environmental assessment pertaining to this roadless area.

NY-N-409

Rt. 1, Box 165B
Galway, NY 12074
April 18, 1985

Mr. Max Peterson
Chief, Forest Services
Washington, D.C. 20250

Dear Mr. Peterson:

I am writing to ask you to review your agency's decision to support only an addition of 165,000 acres to the Bob Marshall Wilderness and the Scapegoat. A

The adjoining forest lands are needed to protect our shrinking wildlife in a natural environment. Petroleum and gas can be found elsewhere and who knows in a few years Science may come up with a replacement making it unnecessary. Our wildlife and forests can't be replaced. Zoos are not the answer. Here in New York we are gripped by the fear that acid rain has

FOREST SERVICE RESPONSE

NY-N-409

A The Lolo Final EIS recognizes the importance of the Bear-Marshall Scapegoat-Swan roadless area as a wilderness and its contribution to the existing wilderness complex in terms of wildlife. Of the 120,900 acres on the Lolo, 69,250 acres are recommended for wilderness.

NY-N-409

destroyed over 100 lakes and vast amounts of forest. Our wildlife is suffering the results of this. If some type of this kind of disaster hit the "Bob," would the small addition of 165,000 acres support the wildlife? The potential 878,000 acres couldn't guarantee survival but it certainly would help. Our grizzlies are in desperate need of the kind of habitat the Bob has and may end up the only place in the U.S. they might survive. We may [illegible] the Rocky Mtn. wolf off the endangered list by giving them some more room. While Buster LaMoure may think the drill rigs won't decimate the grizzlies, the pressure those companys will exert if petroleum is found to develop the area would. We need our bears, our elk, moose and so on. Please, fight to support a greater addition of acres to the "Bob, Scapegoat and Great Bear.

Thank you. Diane Palmatier

B

FOREST SERVICE RESPONSE CONTINUED

The Forest Service agrees that in more recent times, silvicultural practices and operating seasons have been impacted by grizzly bear management. Management area 20, shown on the Forest Plan map, are the lands designated to help recover the grizzly bear while allowing timber harvest or using timber harvest to enhance bear habitat. The Plan will provide more certainty on how the land is managed in the future. Forestwide Standard No. 24 mandates that all threatened and endangered species occuring on the Lolo be managed for recovery to a nonthreatened status. The Standard states that management practices in essential habitat must be compatible with the habitat needs of the species.

B

M-N-410

FOREST SERVICE
LOLO NATIONAL FOREST
JUN 10 1985
RECEIVED

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name Jennifer Cote
Address 3314 Paxson
Missoula, MT 59801
Organizational Affiliation
personal comments (if any)

- -

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

- -

After tearing up several drafts of very pointed comments about the Revised Draft EIS I would like to make the followinggeneral comments ;

I find it hard to believe that the planners would not have made more substantial changes in the preferred alternative following public comments you have received. It seems to me that any final plan needs to be more sensative to the local economy, more commited to maintaining water quality and yield, more commited to flexible timber need projections and a changing emphasis of demands on the forest. A

I would strongly suggest that the Lolo Forest staff become involved in the recreational value study which will be conducted by Fish, wildlife and Parks with approval of the '85 legislature. While the $21 value per day may fit some national mean it can not be accepted for western Montana. Notonly is the dollar value low but there is no consideration of the changing economy in western Montana. Recent work by state and local entities to draw new business to the area has pointed out that tourism and recreation are the fastest growing segments of business. They are assuming a greater percentage of the economic base in our area. (MT Dept. of Commerce) B

Recent press from the timber industry emphasizes that demand is unlikely to reach the peak that occured just prior to the beginning of this planning process and that when it picks up again, mechanization in the industry will likely replace any potential for new jobs. It seems to me thatwe can not afford to weight the final plan as heavily in favor or timber production as it is. Or a plan to shift emphasis in response to demand needs to be an explicit part of the alternative. C

I still think that the final plan should show stable or decreased road miles on the forest. I doubt that you will ever be able to solve the deficit cost factor of roads but I think they should only be built for timber cutting operations after the sale is made, should be reclaimed before roads are built in adjacent drainages. D I think that recreational access is only necessary to a drainage and all local roads should be closed or never developed. E Any new roads should have as a first consideration non-degredation of streams.

I support the Governor's recommendations for Roadless Area allocations. Without a greater commitment by the Lolo Forest to roadless areas I would then support increased requests for wilderness designation. F

FOREST SERVICE RESPONSE

M-N-410

A Several changes have been made in the Forest Plan since it was first written due to public comments and review within the agency. Public comments contain varying and sometimes opposing views on what constitutes a balanced Forest Plan. These viewpoints are all considered in the effort to best manage the Forest. The Plan commits the Forest to maintaining water quality, sensitivity to the local economy and flexibility in offering timber sales, as suggested.

B The values per recreation visitor day (RVD) for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and the RPA program, as required by the Forest and Rangeland Renewable Resource Planning Act. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging and so forth to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

C History is variable in terms of timber volumes offered and sold. In the past five years, the volume sold has averaged about 60 million boardfeet (MMBF). Over an extended time period, volumes up to 160 MMBF have been sold. It is evident that during peak value times, any sale will sell, while during low yimber value periods, only the best sales will sell. If over an extended time period, the timber market results in low volume being sold from the Lolo, a revision in the Plan may be considered.

D Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas. The Forest will road only those areas where this analysis shows that discounted revenues from all planned timber sales in an area cover discounted costs unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability.

E Miles of open road will change very little on the Forest, although there will be an increase in miles of road built. Roads built for timber access will be needed intermittently for future timber management. Ground disturbance would increase substantially if these roads had to be reclaimed after each use. Forestwide Standard No. 50 emphasizes minimizing soil movement to prevent stream degradation.

F The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo, and wilderness additions to the Selway/Bitterroot Wilderness and Scapegoat Wilderness. In addition, 180,700 acres are designated for roadless management.

P-N-420

March 23, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA MONTANA
APR 17 1985
RECEIVED

Orville Daniels, Supervisor
Lolo National Forest
Building 24, Ft. Missoula
Missoula, MT 59801

Dear Sir:

I have just reviewed the proposed changes to the Forest Plan, called attachments A, B, and C. I have again read the 1983 proposed draft wall to wall, and offer you the following comments for your consideration in the final plan.

Your management direction statements in MA 20 appear to be admirable, but remain weasel worded to the point that every forester appears to justify chasing every board and every engineer justifies construction and re-construction beyond reason. In my view, you cannot optimize the timber growing potential and optimize grizzly habitat conditions for recovery in the same management direction. Maybe you can optimize timber salvage if it is only second priority to the bear. A

In Item 20 (Road Standards) it states roads will be located to cross, rather than parallel, streams. Nearly all of MA 20 is steep country. Roads now parallel in and out creating much soil disturbance. The present track record of roads in West Fork Thompson River is not good. I believe geography of MA 20 will only compound sediment from roads unless you totally ignore economic cost in construction. In my opinion, every mile of road built in MA 20 is one more nail in the grizzly coffin, even with closures. B

I believe that some land owner adjustments have been short sighted and will continue to short the public. Too many exchanges are for ease of administration to the Government and large land companies. When we lose large checkerboard ownership the next step will be private hunting areas by Champion and Burlington Northern Land Company for their economic gain. C

Acquisition guidelines should be enlarged to cover timbered lands adjacent to National Forest that could provide present and future access into National Forest land. In the last 10 years we have experienced several instances of large tracts being broken up next to our boundary. The first thing that happens is administratively, and publically, the land is locked up. An example is from Thompson River west to Graves Creek, about 13 miles with no access. Another typical example is a piece of Champion ground on the Clark Fork River adjacent to Forest ground. Sometime in the future this land will be taxed other than timber land. Sub-division would ruin the only access for miles adjacent to National Forest land and Clark Fork River. I recommend we look a little further ahead in some of our land acquisition. D

FOREST SERVICE RESPONSE

P-N-420

A The final Forest Plan provides more precise direction for managing grizzly bear habitat, with Management Areas (MA's) 20 and 20a. The management direction for MA 20 requires optimizing habitat conditions and minimizing mortality factors for the grizzly. Timber harvest is allowed but is subordinate to bear needs; roads for timber harvest will be minimized. Habitat management in MA 20a will utilize prescribed burning rather than timber harvest.

B The Forest is committed to road construction methods that minimize sedimentation problems (Forestwide Standard Nos. 16 and 50). Roading projects are evaluated at several stages, as outlined in Forestwide Standard No. 11, and if the geography precludes building the road economically, the project can be dropped or deferred.

C The guidelines in the plan are specifically written to protect the public's right of entry into areas of checkerboard ownership except where resource requirements dictate that an exchange is necessary, thus avoiding the problem which you have identified. (See Appendix J.) Acquisition will be directed toward those private lands which compliment the resource management goals identified in the Plan, and not solely for the purpose of improvement management efficiency of either the Forest Service or private landowner.

D The Forest Service acquires public easements across private lands when it is determined that access is needed to achieve management objectives.

P-N-420

p. 274

Five years is a long time to get a plan approved. One of the measures of this plan should be "can we follow it". I submit that the Plains/Thompson Falls District is over cutting MA 20, not willfully, but by not understanding the management directions 1 and 2. Thompson Falls District five year timber action plan for 1981 and the Plains/Thompson Falls action plan for 1985 are examples. If you add Seeley Lake cutting in MA 20, I estimate you have ignored your plan four fold. E

Fred L. Cavill

FRED L. CAVILL

860 River Road West
Plains, MT 59859

E The original MA 20 has been separated into two allocations, MA 20 and 20a. MA 20 has a regulated timber output that is driven by the needs for grizzly bear habitat enhancement. This is stated in MA 20, Management Direction 1 and 2 in the Plan. MA 20a has no regulated timber output and habitat enhancement will occur throuth the use of prescribed fire.

The potential for overharvesting in MA 20 has been resolved by the following steps: 1) The Plan now clarifies the relationship of timber management to grizzly bear needs (Plan MA 20, Manaected.
Direction 2); 2) A cumulative effects model has been developed to assess potential effects on the grizzly bear which will allow for better timber harvest scheduling to meet the bear's needs; and 3) grizzly bear habitat inventory for the Forest is completed which will ensure through a better analysis process that critical grizzly bear habitat is protected and managed to optimize longterm values. The current timber sale action plan includes a number of MA 20 areas that may be in excess of the actual acres desirable for grizzly bear enhancement. Through project level planning and use of the grizzly bear cumulative effects and current inventory, we expect some significant changes in the current scheduling that better reflect the needs of the grizzly bear.

P-N-420

p.3 of 4

PLAINS/THOMPSON FALLS RANGER DISTRICT
REVISED SIX YEAR ACTION PLAN

February 6, 1985

VI-248

FY 85

Spring Jet	9.2
Tepee Cr.	3.4
West Murr	7.0
Small Sales	5.0
	25.0 MMBF

FY 86

Murr Outback	10.5
Upper So. Rock	10.5
Canyon Face	5.5
Small Sales	2.4
	29.0 MMBF

FY 87

Chippy Cr.	10.0
Noble North Fork	13.5
Small Sales	1.5
	25.0 MMBF

FY 88

Bear Cr.	10.0
Cliff Cr.	5.0
Shroder Tie-thru	5.0
Lower Mandy	3.0
Small Sales	2.0
	25.0 MMBF

FY 89

Dry Gold	9.0
East Bay	10.0
Shroder Salvage	4.0
Small Sales	2.0
	25.0 MMBF

FY 90

Little Rock-Sears	8.0
Shorty Gulch	5.0
Coney	5.0
Graves Cr.	3.0
Small Sales	4.0
	25.0 MMBF

FY 91

Upper Dry Wilkes	9.0
Thompson Face	4.0
Barktable	3.5
Upper Clear	3.5
Small Sales	5.0
	25.0 MMBF

FY 92

Prospect Face	4.0
West Fork-Anne	5.0
Clark Mtn.	4.0
Whiteface Cr.	2.0
Siegel Cr.	6.0
Small Sales	4.0
	25.0 MMBF

FY 93

Mosquito	4.0
Demont	7.0
Stoney Benson	4.0
East Crow	4.0
Blossom	3.0
Small Sales	3.0
	25.0 MMBF

MA-20 22.1 MMBF
Does not count small
Sales

P-N-420

p.4 of 4

Thompson Falls
Proposed 6-Year Action Plan
Juen 30, 1981

FY	Sale Name	Reg MMBF	Unreg MMBF	Total MMBF
82	West Crow	4.1	0.5	
	Four Lakes	4.7	0.3	
	Canyon Face	4.2	0.3	
	Small Sales	2.8	0.8	
	Special Salvage	0.6	0.3	
	Totals	16.4	2.2	18.6
83	Cherry Camp	8.7	0.3	
	Cliff Creek	3.8	0.2	
	Fishtrap	3.6	0.4	
	Small Sales	0.6	0.5	
	Special Salvage	0.2	0.2	
	Totals	16.9	1.6	18.5
84	Barktable	3.3	0.2	
	Prospect Face	3.7	0.3	
	Upper Clear	3.2	0.3	
	West Fork	4.2	0.3	
	Small Sales	2.0	0.7	
	Special Salvage	0.8	0.4	
	Totals	17.2	2.2	19.4
85	Thompson Face Helio	13.3	0.7	
	Small Sales	1.5	0.3	
	Special Salvage	0.4	0.3	
	Totals	15.2	1.3	16.5
86	Thorn Helicopter	3.7	0.3	
	Baystate	3.7	0.3	
	Beatrice	2.8	0.2	
	Chipmunk	5.1	0.4	
	Small Sales	1.8	0.4	
	Special Salvage	2.0	1.0	
	Totals	19.1	2.6	21.7

MA-20 38.5 MMBF
Does Not count
small sales

WM-N-425
(1 of 3)

RAN-DAN RANCH
ROCK CREEK ROAD
ROUTE 1 - BOX 1450
CLINTON, MONTANA 59825

FOREST SERVICE
JUL - 1 1985

June 26, 1985

Orville L. Daniels
Forest Supervisor - Lolo National Forest
Building 24, Fort Missoula
Missoula, Mt. 59801

Dear Orville;

I wish to thank you for granting me an extension of time in which to get in my response to the Proposed Lolo National Forest Plan. The following is a summary of my notes + thoughts.

Timber sales + road building are the activities that impact the forest + the planning process the greatest. Their values + costs have been debated for years + will continue to be. In the process, recreational values have been vastly understated. For instance, a $21 per RVD for big game hunting is much too low. A figure of almost double that would be more accurate in my mind. With these low figures, timber values are weighted too high when calculating economic benefits. A

Deficit timber sales should be avoided in every instance! The 25% road + school funds are presently calculated from gross receipts. The Administration proposes to revert to the original method of calculating these funds from profits on sales or a variation there of. This is a compelling reason to see that all sales are profitable. Also, in this time of budget deficits + huge national debt, profitable timber sales MUST be the rule. The public demands that the postal Service operates in a profitable manner + can expect no less from the Forest Service with its B

FOREST SERVICE RESPONSE

WM-N-425

A Recreation use projections for the Lolo were developed by the regional office and were based on total historical recreation (which included nonresident recreation) and historical regional population levels. Projections of future regional populations were then used to estimate future recreation demands, including nonresident recreation.

The values per Recreation Visitor Day (RVD) for different types of recreation are based on willingness to pay (WTP) values determined through studies contracted by the Washington Office of the Forest Service for use in Forest Plans and RPA. While the values may appear low in comparison to timber, the values estimate what the recreationist would be willing to pay for the particular type of experience. Expenditures for travel, equipment, time, lodging and so forth to get to the point of use are not included in the WTP values, but are a part of the impact analysis, i.e., the impact of recreation activities on the local economy in terms of jobs and income. The WTP values are used in the economic efficiency analysis.

B The Lolo has been doing an economic analysis on all of the timber sales in its program. The analysis is designed to determine the economics of managing an area, rather than an individual sale. Many times, the first entry into an area requires a large amount of road construction. With the high cost of road construction, the first sale in an area may actually be "below cost." However, these roads will be used for subsequent entries. With many of the roads in place, the second and third entries may be "above cost" and more than offset the initial road costs. The Forest will road only those areas where the economic analysis shows that discounted revenues from all planned timber sales in an area cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. The economic analysis in the Forest Plan also considers long-term management for the entire forest rather than individual sales.

WM-N-425
(2 of 3)

timber sales. The capital costs of road building C
into roadless areas should be avoided/minimized.
All timber sales must be planned + closely monit D
in order to protect + improve Wildlife + Aquatic
resources. These resources continue to be under-
valued by Forest Service officials. More importantly,
these resources will continue to come under greater
pressure as Forest Service + Montana F. W. + P. projections
+ objectives are realized. (25% to 40% increases over
1982 levels by 1990 for Deer + Elk hunting + 15% to
20% increases in trout fishing). The value to the
economy of guided fishing trips on Rock Creek
alone has been placed at $250,000. annually (almost all
of it out-of-state money coming into Montana) by
Forest Service + F. W. + P. officials. We also must
not forget that major rivers such as the Clark Fork
+ the Bitterroot while not within the forest
are directly impacted by forest management practices.

The inability of the Lolo N.F. to sell + harvest
40% (on average) of timber offered for sale in
the last decade (45% since 1982) plus the sales E
that were canceled in 1985 after having been sold
earlier shows a definite decline in the demands
made on the timber resources. This coupled with
the increases of RVD's experienced + predicted
dictates that Alternative B be selected as the F
Forest Plan. Timber management is confined
to the most productive sites (a wise business
practice). In a truly dynamic system which
reviews + revises the Forest Plan in 5 + 10 year
time frames, changes can be made as socio-
economic conditions dictate at the time. In the
interim, wildlife + aquatic resources, with their
potential for dramatically increasing in value, will
have been protected.

FOREST SERVICE RESPONSE CONTINUED

C Meeting public resource demands for timber production, recreation opportunities and protection from fire, insects and disease requires an increase in road mileage for access. This necessitates that roads be built into some areas identified as roadless, and that more roads be constructed into developed areas to reach timber which has not yet been accessed. The Forest Plan has many requirements, including road closures and minimum road standards, to mitigate adverse impacts. The Plan also outlines an active monitoring program to ensure the protection of other resources.

D Standards No. 21 through 28 are specific to wildlife and fish and provide habitat protection on the Forest through a variety of means. Standard No. 26 speaks specifically about providing a variety of hunting recreation opportunities by using project planning and road management to assist the Montana Department of Fish, Wildlife and Parks in meeting their goal of maintaining long hunting seasons with minimum restrictions.

E The reduced demand for Forest Service timber sales in recent years is considered to be a result of recession in the national economy rather than an indication of long term market demand. As market conditions improve and timber reserves on private lands become depleted, the volume of offered timber sold and harvested on the Forest will increase.

F The Forest Service believes the selected alternative, Alternative d, provides the better blend of the needs of the people and the capabilites of the Lolo National Forest to provide goods and services.

3

WM-N-425
(3 of 3)

In regards to wilderness, I feel the Welcome Creek Addition + the Quigg Peak areas should be included in the wilderness system. G

As a member of the Rock Creek Advisory committee I was disappointed in the failure of the Forest Service to use and/or refer to the work + input of the committee in Chapter IV of the Forest Plan. The Aquatic Resources Monitoring Program as proposed + accepted must be carried out at all costs. H

Having lived on Rock Creek since 1971, I have witnessed first hand the dramatic increase in recreational use of the forest resources. These increases can only be sustained by dedicated managers who recognize the true values of these resources + who have the fortitude to push for an equitable resolution in the planning process that will fairly weight these values.

Sincerely,

Adam Michnevich

FOREST SERVICE RESPONSE CONTINUED

G In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness. The Welcome Creek area is already a part of the National Wilderness System.

H The Rock Creek Advisory Committee has been an important resource for developing an aquatic resources monitoring program for Rock Creek. This committee also provided assistance in Management Area determination. Refer to Rock Creek Chapter IV in the Forest Plan.

CT-N-426
(1 of 2)

Kenneth Goldsmith
555 Forest Road
Northford, CT 06472

June 23, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
JUL - 1 1985
RECEIVED

Forest Supervisor
Lolo National Forest
Building 24, Fort Missoula
Missoula, MT 59801

Dear Sir,

Although I was unable to respond before the June 1 deadline, I hope you will accept these brief comments on the Proposed Lolo National Forest Plan and Revised DEIS. While this revised plan certainly marks a step in the right direction, it continues to be marred by grave flaws.

Try as I might, I cannot understand the motivations of Forest Service officials in continuing to ignore reasonable and balanced alternatives, sometimes even ones in their own documents, in favor of blueprints for development and "compromises" destined never to see the light of day. I can only suppose that some actually want to encourage a more polarized political climate in which these issues are discussed. The Lolo plan, unfortunately, shows signs of this affliction.

I want to express my very, very strong suport of Alternative F (hopefully with some modification). Let me point out a few facts taken from your document:

1) Alternative F provides a virtually identical allowable timber sale quantity, long-term sustained yield, and number of acres available for timber harvest as Alternative D, your preferred alternative.

2) Alternative F has an identical average annual return to the United States Treasury as Alternative D.

3) Alternative F offers a virtually identical increase in local employment as Alternative D.

A

With this in mind, it is hard to see how the Forest Service could pass up the opportunity to meet almost everyone's needs (timber, range, recreation, wildlife, wilderness) at once and yet truly protect the natural environment of one of its premier National Forests. It is unfortunate that

FOREST SERVICE RESPONSE

CT-N-426

A Your assessment is correct that Alternative f provides a timber sale quantity and long-term sustained yield similar to Alternative d, while yielding an identical average annual return to the United States Treasury and a like level of employment. However, Alternative f requires a greater investment in budget and significantly lowers the Present Net Value, due to the higher investment cost to produce the above outputs. Alternative d remains the preferred alternative because it provides a better blend of public resource demands based on the capability of the land to provide goods and services.

CT-N-426
(2 of 2)

such a rigid institutional bias against carefully balanced wilderness proposals has become ingrained in the Forest Service. The Lolo has remarkable wilderness opportunities and especially valuable wildlife resources, especially its grizzley habitat. These assets demand permanent protection against the ever-present threat of below-cost timber sales and road-building.

Therefor, I strongly support wilderness designation for the following roadless areas (some of which are in addition to those in Alt. F):

Bear-Marshall-Scapegoat-Swan (01485) - I support Alt. IV of the joint recommendations, but with more emphasis on designated wilderness. B
Marshall Peak (01781) - the entire area. C
Cube Iron - Silcox (01784) D
Cherry Peak (01791) E
Sheep Mtn - State Line (01799) F
Lolo Creek (01805) G
Quigg (01807) H
Hoodoo (01301) I
Cataract (01665) J
Stony Mountain (01808) K

I also strongly support continued roadless management of the following areas:

Reservation Divide (x1205) L
South Siegel - South Cutoff (07195) M
North Siegel (01796) N
McGregor - Thompson O

These proposals are not unreasonable. To the contrary, they substantially reflect the kind of balanced use of our National Forests which is the intent of Congress, the will of the American people, and our gift to our children. As a frequent visitor to Montana, I have a deep concern about the future of the Lolo NF. I ask you, as a minimum, to adopt Alternative F of the revised DEIS.

Please continue to keep me informed of planning activity on the Lolo NF, and send me a complete copy of the final Plan and EIS.

Thank you

Sincerely,

Ken Goldsmith

FOREST SERVICE RESPONSE CONTINUED

B Bear-Marshall-Scapegoat-Swan (01485)
The Forest preferred alternative is consistent with the recommendations in Alt. IV of the joint recommendations.

C Marshall Peak (01781)
The Forest Service recommended alternative d gives strong emphasis to grizzly bear management in this area. The entire area will be maintained as roadless in the next 10 years.

D Cube Iron-Silcox (01784)
The Forest Service recommended alternative recognizes the importance of grizzly bear habitat in the area, designating about 9,500 acres for this management. Most of the area (about 36,000 acres) will remain as roadless in the next 10 years.

E Cherry Peak (01791)
The preferred alternative assigns about half of the area to roadless management and the remainder to a variety of other uses. A major portion of the area (about 35,000 acres) will remain roadless in the first decade.

F Sheep Mountain-State Line (01799)
About half of the Lolo portion for this area is designated for roadless management in the preferred alternative. Thirty-three thousand acres of the 40,500 acre Lolo portion will remain roadless in the first decade.

G Lolo Creek (01805)
In the Final EIS the Forest Service recommends part of this area for wilderness classification. This is a change from the draft statement.

H Quigg (01807)
This area is recommended for wilderness (60,830 acres) and the remainder will remain roadless in the next decade.

I Hoodoo (01301)
This area, including the Irish Basin-lower Cache Creek portion, is proposed for wilderness designation,

J Cataract (01665)
Over half of this area is recommended for roadless management and this continues to be the position in the Final EIS.

K Stony Mountain (01808)
In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period.

CT-N-426 p.3

FOREST SERVICE RESPONSE CONTINUED

In the areas suggested for continued roadless management, the Forest Plan management includes:

Reservation Divide (1205)

Management Emphasis		Acres
A	Timber/Range	4069
D	Visual	497
E	Riparian	218
F	Roadless	11473
G	Miscellaneous	43

South Siegel-South Cutoff (01795)

Management Emphasis		Acres
A	Timber/Range	2200
C	Wildlife/Other	6543
D	Visual	2221
E	Riparian	342
G	Miscellaneous	3494

North Siegel (01796)

Management Emphasis		Acres
A	Timber/Range	2046
C	Wildlife/Other	3605
D	Visual	412
E	Riparian	150
G	Miscellaneous	3787

McGregor-Thompson (L1LAQ)

Management Emphasis		Acres
A	Timber/Range	18187
C	Wildlife/Other	2632
D	Visual	1724
E	Riparian	549
F	Roadless	282
G	Miscellaneous	4476

WM-R-1

RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

Name A.B. Magnusson

Address Box 347 Frenchtown, MT 59834

Organizational Affiliation Back Country Horsemen of Missoula (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

Noxious Weed Control in the Forest Service Areas

Access roads in the forest areas are the primary avenues for spread of noxious weeds, especially spotted knapweed and leafy spurge. Therefore it would seem to be logical that a limited use of herbicides along these roads be initiated especially the first few years that a new road is opened. These applications would delay measurably the spread of these weeds. A

The herbicide 2-4-D is not particularly harmful to grazing animals. Approximately 5 gallons will cover 20 acres for a cost of about $50. I have used it in my pastures and around my trout pond with good results and no harm to the fish or animals.

The Forest Service must begin now to adequately address the problem instead of waiting for research to develop new control measures. We have already waited too long - the situation is very serious.

FOREST SERVICE
LOLO NATIONAL F...
MISSOULA ...
MAR 18 1985
RECEIVED

FOREST SERVICE RESPONSE

WM-R-1

A Roads do provide a suitable seedbed for noxious weeds. There is evidence, however, to indicate that road construction in itself does not assure the establishment of noxious weeds. Recent observations of spotted knapweed suggest that even with a good seedbed and seedsource, tree canopy shading can prevent its establishment. At the same time, noxious weeds are being found in Wildernesses or other undisturbed sites. The basic problem in noxious weed management is a lack of a good understanding of the autecological attributes of them or the synecological relations in the forest environment. A recent review of the literature found almost no references to noxious weeds in a forest environment. Research work done todate has been related to cereal crop and range or pasture land control with limited emphasis on understanding the basic life cycle of the plant.

While herbicide use may occur under special conditions, the topography and vegetation cover on the Lolo make invader plant control extremely difficult with present techniques. Biological control, using agents such as insects, rusts, molds and other parasites on host plants, appears to provide a compatible, long-range approach to this problem.

A situation paper prepared in June 1983 provides the basis for a systematic evaluation of each weed species. An evaluation is currently underway to assess the risk of noxious weed spread in the vegetative communities found on the Lolo, Bitterroot and Flathead forests. Preliminary results of the study suggest a number of management practices that may be used to prevent or reduce the threat of noxious weeds on forest roads. The study has also identified high risk as well as low risk plant communities to the invasion of noxious weeds. These studies will help in the development of alternatives for control strategies.

Continued efforts to promote research on the ecological characteristics as well as in the development of biological controls will be promoted. To facilitate this effort a statement of need has been added to the Research Needs section of the Lolo Forest Plan.

MD- R - 2

Continental Divide Trail Society
P.O. BOX 30002 BETHESDA, MD. 20814

March 26, 1985

Mr. Orville L. Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Fort Missoula
Missoula, Montana 59801

Dear Mr. Daniels:

We have reviewed the revised draft environmental impact statement for the Lolo National Forest Plan.

Enclosed please find a copy of our earlier comments, which continue to reflect our views. We trust you will give these matters further consideration before a Forest Plan is adopted.

Sincerely,

James R. Wolf
Director

VI-257

FOREST
MAR 28 '85
RECEIVED

MD-R-2 (p.2)

This response form is provided for
your convenience if you wish to
comment on the Revised Draft
Environmental Impact Statement
and Proposed Lolo National Forest
Plan. Please return your comments
on this form or your personal
letter by June 24, 1982.

Date: April 26, 1982
Name: James R. Wolf, Director
Continental Divide Trail Society
Address: P.O. Box 30002
Bethesda, Maryland 20814
~~Organization and title if any:~~

Gentlemen:

We wish to comment about the portion of the proposed Lolo National Forest Plan insofar as it relates to the Continental Divide National Scenic Trail.

We agree that the Trail should be located in Management Area 12 and managed in accordance with wilderness classification. We further agree with the provisions authorizing trail construction and the construction of facilities and structures.

We take exception to the statement that the CDT will be composed of Trails 31, 32, and 406 on the Lolo National Forest (p. 49). Such a route is circuitous, unduly remote from resupply opportunities (via Benchmark), and lacks the scenic appeal of alternatives. More important for the present, the process for selecting a permanent location will require public participation in accordance with the forthcoming Comprehensive Management Plan for the CDNST, and any suggestion that a route has already been selected should be avoided.

The long-range forest objectives (pp. 8-9) should include the marking and maintenance of the CDNST, including new trail construction where appropriate. A

We recommend that you consult with the Chairman, Continental Divide National Scenic Trail Advisory Council, P.O. Box 25127, Lakewood, Colorado 80225 for further suggestions regarding the CDT.

Thank you for inviting our comments.

P.S. Please send us a copy of Appendix C-2 to the Plan and also, when available, a Recreation Opportunity Guide for the Seeley Lake Ranger District.

FOREST SERVICE RESPONSE

MD-R-2

A The Forest identified Trails 31, 32 and 406 as the possible location of the Continental Divide National Scenic Trail (CDNST) because: 1) there is a serious potential for grizzly bear conflicts if a new trail is constructed along the divide itself, and 2) the public has requested information as to where the Trail will most likely occur, in order to hike it. Actual trail locations will be determined via the Final Comprehensive Plan for the CDNST, and the wording has been changed in the Forest Plan to reflect this.

EM-R-3

Montana Bowhunters Association

G.L. "Buck" Damone, *President*
RR 1 Box 1702
Lewistown, Montana 59457

Telephone (406) 538-7592

6/1/85

FOREST SERVICE
JUN - 1 1985
RECEIVED

Forest Supervisor
Lolo National Forest
Missoula Mt 59801

Dear Sir:

The Montana Bowhunters Association has reviewed your draft EIS at length. Instead of a lengthy letter explaining our position which is the same as that of the Montana Department of Fish, Wildlife + Parks, we would reinforce their comments prepared by Robert Martinka which were send to Mr. Ralph Driear of the Governors Office and thus sent to you.

Sincerely,
Eileen T. Damone
M. B.A.

FOREST SERVICE RESPONSE

EM-R-3 M-G-11

Refer to WM-G-16 Forest Service Response to the Governor's letter.

WM-R-4
(1 of 2)

american fisheries society
MONTANA CHAPTER

370 3rd Avenue W.N.
Kalispell, Montana 59901

May 31, 1985

FOREST SERVICE
LOLO NATIONAL FOREST
JUN - 1 1985
RECEIVED

Orville L. Daniels
Forest Supervisor
Lolo National Forest
Bldg. 24, Ft. Missoula
Missoula, Montana 59801

Dear Mr. Daniels,

Thank you for the opportunity to comment on the revised Lolo National Forest Plan and Draft Environmental Impact Statement. This forest planning effort has been a major undertaking for all the forests in the state and our Chapter appreciates the magnitude of your involvement.

Our Chapter's comments are fairly general in nature with respect
to fisheries and their habitat. This is a result of the Forest's
approach to fisheries which we feel in itself is very general
and unfortunately, inadequate to the resource. Our Chapter feels
that the Forest Plan has made no true committment to the long term A
maintenance of aquatic habitat on the Forest. The Lolo surrounds
all three of the Class I streams in Western Montana, Fish Creek,
Rock Creek and the Blackfoot River. With an increase of 111%
in road building and the development of 48% of the current road- B
less lands, we do not feel a true committment to the protection
of Class I streams and their tributaries can be achieved.

The Plan and Draft EIS is difficult to read as a result of the
scattering of aquatic resource information. Statements are vague
concerning sediment potential, riparian management and the adverse C
impacts the various alternatives will have on the aquatic resource.
We feel in determining various land use activities in a drainage
that the State Stream Classification System should have been
incorporated into those proposed activities and activities should D
be based on the importance of each stream to fish, flows and the
other values used in classifying waters. Although our Chapter
appreciates the effort to provide special management for the Class
I stream, Rock Creek, equal consideration should be given to land E
in the Fish Creek and Blackfoot River drainages as well.

Although you have state the R-1/R-4 sediment model will be used

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FOREST SERVICE RESPONSE

WM-R-4

A The Forest Plan provides several Forestwide Standards, Nos. 15, 19 and 28, directing the maintenance of the aquatic habitat. In addition, Management Areas (MA's) 13 and 14 provide specific direction for activities within riparian areas.

B Rock Creek receives special emphasis in the Forest Plan. Chapter IV provides the coordinated direction for both the Deer Lodge and Lolo National Forests.

Roads are located and designed to prevent degradation of the aquatic habitat. Road management will restrict travel during wet weather periods to prevent road damage and increased sediment production.

C The Forest Plan has a new format which should consolidate management direction. The Final EIS (FEIS) is written in the prescribed format. Changes have been included in each document to reflect the latest directions from the Chief's office and from public comments.

D In most cases, the Montana Department of Fish, Wildlife and Parks utilized Lolo stream survey data to develop the classification for each stream. Each District has this information, plus additional data on each stream, broken down specific to each stream reach. This data is much more detailed and specific than that incorporated into the State classification. It is reviewed and incorporated into proposals at the project design phase.

E The riparian prescriptions, as defined in the Rock Creek Chpater, have been applied to all Forest riparian areas. The application is accomplished through the Forestwide Management Standards and the management goals and standards of Management Areas (MA's) 13 and 14.

WM-R-4

(2 of 2)

in determining land management activities in a drainage, it appears the funding necessary to collect the data to se the model has not been sufficiently allocated. Specific data are necessary to calibrate to model before its use and the now, when and where of collection of that data has not been clearly stated in the Plan or the Draft EIS. F

The numbers of trout 5" and greater are grossly underestimated for the 3500 miles of stream and 96 lakes on the Lolo. The figure used would equal only an average of 27 trout per mile of stream which is extremely low and obviously in error. Because of the underestimation of the fishery resource, we feel that the importance of fisheries to the Forest has been severely neglected and not given the priority it deserves in determining various land management activities. G

Although roadless management of lands disallows timber harvest, road construction and mining, we feel in the following areas H the most valuable resource is fisheries, wildlife and the recreation they provide and would best be protected by wilderness designation. We recommend roadless management of the following areas: Hoodoo (91,500 acres), Clearwater-Monture (57,000 acres), Cube Iron (32,900 acres), Lolo Creek (3990 acres), Welcome Creek Addition (1,100 acres), Stony Mt. (the Lolo portion) and Quigg Mt. I

Over the past few months it has come to the public's attention that we are paying to log our national forests. In the last five years, the Lolo has failed to sale an average of 50 MMBF/year, indicating the resource is not in great demand. The aquatic degradation that our Chapter feels will occur under the proposed action is unacceptable and one which we are not willing to sacrifice for deficit timber sales. J

In conclusion, our Chapter would like to see the valuable fisheries resource of the Lolo and its downstream rivers and streams be given a more complete analysis and with that reanalysis, priorities are likely to change. K This cannot be acheived with the present information or funding allocated and we encourage your staff to clarify the sediment modeling and monitoring program, L reestimate the numbers of catchable trout on the Lolo and reanalyze the costs of timber sales to the lose of fish and their habitat that will occur. M

Again, excuse the generalities of our comments but with the information provided, or lack of, we do not feel more specific comments can be provided at this time.

Sincerely,

Janet Decker-ness
President

FOREST SERVICE RESPONSE CONTINUED

F The budget proposed for monitoring water and aquatic habitat and presented in Forest Plan Chapter V (Table V.2) is designed to provide a sufficient level of information to allow the Forest Management Team to evaluate management effects on the aquatic environment. Annual mintoring plans, including schedules, objectives, procedures, quality control requirements and costs, are available for review if specific details are desired.

G Prior to 1982, the only available fish population data on Forest streams was from Rock Creek. Therefore, the Forest relied heavily on Montana Department of Fish, Wildlife and Parks for fish population estimates. Literature reviews from Montana and Idaho also provided some data. Extrapolation to the Lolo resulted in the 87,000 catchable trout on streams outside of wilderness. The figure did not include lake populations or fish in wilderness areas.

Fish population estimates were updated on Forest streams in 1984. Fish populations for non-wilderness streams were extrapolated from these new estimates and produced a larger estimate of 906,000 for the existing situation on the Forest.

From an economic standpoint, fish cannot be valued beyond demand, and the expressed fish population exceeds demand substantially; upward changes in population will not increase fisheries values relative to other values.

H Although mineral exploration and mining may be conducted in roadless areas, activities must meet MA 11 management direction.

I The Draft EIS reviewed 776,190 acres of roadless land. The Forest Plan recommends 223,600 roadless acres for wilderness. They are Quigg, Great Burn/Hoodoo (which includes the Irish Basin/Cache Creek area) and additions to the Selway/Bitterroot Wilderness and the Scapegoat Wilderness. In addition, 180,700 acres continue under roadless management.

The Final EIS does not recommend wilderness designation for the Cube Iron-Silcox area; 9,464 acres are designated for grizzly bear habitat and 14,136 acres for roadless management. Most of the area (about 36,000 acres) will remain roadless within the next 10 years.

The Final EIS recommends a portion of Lolo Creek, including Lolo Peak, for wilderness designation. This is a change from the draft statement.

In the Stony Mountain area, 30,900 acres will be managed in a roadless condition during the Plan period. In the nearby Quigg roadless area, 60,830 acres have been recommended for wilderness.

The Welcome Creek Addition will remain roadless in the next decade.

FOREST SERVICE RESPONSE CONTINUED

J The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

K The calculated fisheries numbers have been modified since the DEIS was issued. The newer numbers are based on updated fish density information resulting from recent population estimates made by Montana Department of Fish, Wildlife and Parks. Preferred alternatives in earlier drafts and in the Final Lolo Forest Plan have provided for maintenance of existing populations of fish in all drainages. Forestwide Standard No. 28 commits the Lolo to following land management practices designed to have a minimum impact on the aquatic ecosystem, free from permanent or long-term unnatural imposed stress.

L Although many drainages on the Forest were developed before there was a formalized monitoring program (prior to 1975), the Forest has initiated monitoring on several undeveloped drainages with the purpose of providing baseline information for those drainages prior to development. Once development commences, the same monitoring procedures will be continued to determine if changes occur in water quality, the aquatic environment or fisheries habitat. The results of this type of monitoring can be extrapolated to streams with similar hydrologic and biologic characteristics in an effort to evaluate what changes may have occurred in those drainages that were developed prior to monitoring. The data available to date suggest a healthy fish population in developed drainages, although increase have been measured in sediment in a few drainages such as Schwartz Creek and Lolo Creek.

M The impacts on fisheries from activities on the land were considered in all alternatives in the management prescriptions. These impacts are displayed in the numbers of fish shown for each alternative in Table II-44.

6/25/85 WM R-5

FOREST SERVICE
LOLO NATIONAL FOREST
MISSOULA, MONTANA
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RESPONSE FORM
Revised Draft Environmental
Impact Statement (RDEIS)

Proposed Lolo Forest Plan
February 15, 1985

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Organizational Affiliation ROCK CREEK SPORTSMEN (if any)

This response form is provided for your convenience in commenting on the Revised Draft Environmental Impact Statement and changes in the Proposed Lolo National Forest Plan. Please return your comments on this form or your personal letter to Orville L. Daniels, Forest Supervisor, Lolo National Forest, Bldg. 24, Fort Missoula, Missoula, Montana/59801. In order to use the information most effectively in the process, we would appreciate receiving your comments by June 1, 1985.

Thank you for extending our response time per earlier request by Adam Wichnewich.

We believe deficit sales of timber should be avoided simply because they are not business like. Hopefully the current law will be reverted to 25% of profit as a source for local taxes. A

Since approx. only 75% of timber offered for sale is actually sold + future estimates indicate further reductions in Western Mont. it would seem that the costly proposed additional roads are undesirable from both an economic as well as ecological standpoint. B

Mont. Dept of F.W.+P. estimates an increase of 20% in hunting pressure in the next several years. This seems to indicate more efforts to increase habitat rather than decrease it, primarily by addl. roads. C

The recreational values of Rock Creek seem to have been understated, in comparison to timber + mining interests. D During a recent meeting with your Mr. Tom Fsolar he estimated that float trips alone are (or will be) worth $2 1/2 M yearly.

We purposely made our response brief + trust that it will be of some value in your planning.

Bob Wolff – For Rock Creek Sportsmen.

FOREST SERVICE RESPONSE

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For clarification, the Forest Service defines a "deficit sale" as a timber sale that does not return a normal profit to the purchaser. The public sometimes defines a "deficit sale" as a sale where the revenues do not cover the costs. To avoid confusion, the latter situation will be defined as a "below cost" sale in this letter.

A The "below cost" sale issue began when it appeared that sale revenues were not covering sale costs on Forest Service timber sales. This is sometimes the case during the initial sale entry into an unroaded area - the timber sale revenues from the first sale do not cover the road costs. However, the roads built for the first sale will be used to access several future sales. Therefore, a more accurate appraisal of sale revenues and costs requires the consideration of revenues from all timber sales. The Forest will road only those areas where discounted revenues from all sales cover discounted costs, unless net public benefits justify a timber loss. Examples of net public benefits are improved wildlife forage and community stability. To evaluate long-term economic implications, Forestwide Standard No. 11 requires an economic analysis of all timber sales larger than 1 MMBF and all transportation systems for unroaded areas.

B The inability of the Forest to sell sales in recent years is considered to be a result of recession in the national economy rather then an indication of long-term market demand. As market conditions improve and timber reserves on private lands become depleted, the volume of offered timber sold and harvested on the Forest will increase.

C The Forest Plan recognizes that the demand for hunting recreation will grow. Big game habitat will be improved to accommodate this increase. Road closures and minimum road standards will also be used to minimize the impact of road development. The effect of various management alternatives on big game hunting opportunities was evaluated in Table II-11 (Chapter II, Section D1a) of the Final EIS.

D The Rock Creek drainage receives special emphasis in Chapter IV of the Forest Plan. The Forest recognizes that Rock Creek is a blue ribbon trout stream, and a productive fishery will be maintained. The Forest intends to manage the headwaters to provide the quantity and quality of water necessary to maintain the total Rock Creek aquatic ecosystem.

VII. GLOSSARY

A

ACCESS	See Public Access.
ACRE-EQUIVALENT	A unit of habitat output related to fish or wildlife habitat improvement projects. Acre equivalents are based on the number of acres of habitat that are influenced by one habitat acre actually modified by the habitat improvement project.
ACRE-FOOT	A measure of water or sediment volume equal to the amount which would cover an area of 1 acre to a depth of 1 foot (325,851 gallons or 43,560 cubic feet).
ACTIVITY	A measure, course of action, or treatment that is undertaken to directly or indirectly produce, enhance, or maintain forest and range land outputs or achieve administrative or environmental quality objectives.
ACTIVITY FUELS	Debris generated by a Forest activity that increases fire potential such as firewood gathering, precommercial thinning, timber harvesting, and road construction.
ACTIVITY TYPE	The further description of the actions, measures, or treatments within an activity.
ADFLUVIAL	Freshwater fish that migrate from freshwater lakes to freshwater streams to spawn.
ADMINISTRATIVE FACILITIES	Those facilities, such as Ranger Stations, work centers and cabins, which are used by the Forest Service in the management of the National Forest.
ADMINISTRATIVE UNIT	All the National Forest System lands for which one Forest Supervisor has responsibility.
AIRSHED	Basic geographic units in which air quality is managed.
AFFECTED ENVIRONMENT	The biological and physical environment that will or may be changed by actions proposed and the relationship of people to that environment.
ALLOTMENT	See Range Allotment.
ALLOWABLE SALE QUANTITY	The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity".

ALTERNATIVE	A combination of management prescriptions applied in specific amounts and locations to achieve a desired management emphasis as expressed in goals and objectives. One of several policies, plans, or projects proposed for decisionmaking. An alternative need not substitute for another in all respects.
ALTERNATIVE MANAGEMENT DIRECTION STATEMENT	A descriptive paragraph that defines the management theme that guides the assignment of land to management prescriptions and the associated management activities and programs.
ALTERNATIVE, NO ACTION	An alternative that maintains established trends or management direction.
AMENTITY VALUES	Resource use for which market values (or proxy values) are not or cannot be established.
ANADROMOUS FISH	Fish which spend much of their adult life in the ocean, returning to inland waters to spawn; e.g., salmon, steelhead.
ANALYSIS AREA	One or more capability areas combined for the purpose of analysis in formulating alternatives and estimating various impacts and effects.
ANALYSIS OF THE MANAGMENT SITUATION	A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services.
ANALYSIS PERIOD, LONG TERM	A time horizon of expenditures in an analysis that is two or more 5-Year RPA planning periods in duration. RPA, program, Regional Guide, and Forest plan analyses have long-term periods.
ANALYSIS PERIOD, SHORT TERM	A time horizon of expenditures in an analysis that is only several years in duration. A budget analysis is short-term.
ANIMAL UNIT MONTH (AUM)	The quantity of forage required by the equivalent of a 1000 lb. mature cow for one month.
ANNUAL FOREST PROGRAM	The summary or aggregation of all projects for a given year that, for a given level of funding, make up an integrated (multi-functional) course of action on a Forest planning area.
AQUATIC ECOSYSTEM	A stream channel, lake or estuary bed, the water itself, and the biotic communities that occur therein.
ARETE	A sharp, narrow ridge or crest of a mountain.

ARTERIAL ROADS	Roads comprising the basic access network for National Forest System administrative and management activities. These roads serve all resources to a substantial extent, and maintenance is not normally determined by the activities of any one resource. They provide service to large land areas and usually connect with public highways or other Forest arterial roads to form an integrated network of primary travel routes. The location and standards are often determined by a demand for maximum mobility and travel efficiency rather than by a specific resource management service. Usually they are developed and operated for long term land and resource management purposes and constant service.
ASSESSMENT	The Renewable Resource Assessment required by the Resource Planning Act.
ASSET, CAPITAL	A natural resource, manmade structure, facility, or improvement in natural resources used as an input in production processes.
ASSET, RESIDUAL	The remaining value of a capital asset at the end of the time horizon of the planning or analytical process.
AVAILABLE FOREST LAND	Land that has not been legislatively or administratively withdrawn from timber production by the Secretary of Agriculture or Forest Service Chief.
AUM	See Animal Unit Month.
AVERAGE ANNUAL CUT	The volume of timber harvested in a decade, divided by 10.

B

BASE SALE SCHEDULE	A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade and this planned sale and harvest is not greater than the long-term sustained yield capacity.
BENCHMARK	Reference points that define the bounds within which feasible management alternatives can be developed. Benchmarks may be defined by resource output or economic measures.
BENEFIT-COST RATIO	Measure of economic efficiency, computed by dividing total discounted primary benefits by total discounted economic costs.

BENEFIT, DIRECT	A primary benefit that fulfills specified objectives of the policy, program, or project.
BENEFIT, INDUCED	A primary benefit from an output that is incidental to the objectives of the policy, program, or project.
BENEFIT, PRIMARY	A benefit accruing to resource owners from a primary output, which may be direct or induced, or a residual asset. Primary benefits are components of net public benefits.
BENEFIT, SECONDARY	A benefit accruing to parties other than the resource owners, including effects on local, Regional, and national economies and on consumers of outputs. Secondary benefits are not necessarily included in net public benefits.
BENEFIT (VALUE)	Inclusive terms to quantify the results of a proposed activity, project or program expressed in monetary or nonmonetary terms.
BEST MANAGEMENT PRACTICES (BMP)	The set of practices in the Forest Plan which, when applied during implementation of a project, ensures that water related benefical uses are protected and that State water quality standards are met. BMP's can take several forms. Some are defined by State regulation or memoranda of understanding between the Forest Service and the States. Others are defined by the Forest interdisciplinary planning team for application Forest-wide. Both of these kinds of BMP's are included in the Forest Plan as Forest-wide Standards. A third kind are identified by the interdisciplinary team for application to specific management areas; these are included as Mangement Area Standards in the appropriate management areas. A fourth kind, project level BMP's, are based on site specific evaluation and represent the most effective and practicable means of accomplishing the water quality and other goals of the specfic area involved in the project. These project level BMP's can either supplement or replace the Forest Plan standards for specific projects.
BIG GAME	Those species of large mammals normally managed as a sport hunting resource.
BIG GAME SUMMER RANGE	Land used by big game during the summer months.
BIG GAME WINTER RANGE	The area available to and used by big game through the winter season.
BIOLOGICAL POTENTIAL	The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.

BIOLOGICAL GROWTH POTENTIAL	The average net growth attainable in a fully stocked natural forest stand.
BOARD FOOT	A unit of measurement represented by a board one foot square and one inch thick.
BROADCAST BURN	Allowing a controlled fire to burn over a designated area within well-defined boundaries, for reduction of fuel hazard, as a silvicultural treatment, or both.
BOARD FOOT/ CUBIC FOOT CONVERSION	The mathematical ratio of the board feet contained in one cubic foot of timber. This ratio varies with tree species, diameter, height and form factors.
BROWSE	Twigs, leaves, and young shoots of trees and shrubs on which animals feed; in particular, those shrubs which are utilized by big game animals for food.

C

CANOPY	The more or less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth.
CAPABILITY	The potential of an area of land and or water to produce resources, supply goods and services, and allow resource uses under a specified set of management practices and at a given level of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fires, insects, and disease.
CAPABILITY AREA	A geographic delineation used to describe characteristics of the land and resources in integrated Forest planning. Capability areas may be synonomous with ecological land units, ecosystems or land response units.
CAPITAL INVESTMENT	Investment in facilities such as roads and structures with specially-appropriated funds.
CARRYING CAPACITY	1 (recreation): the amount of recreation use an area can sustain without deterioration of site quality; 2 (wildlife): the maximum number of animals an area can support during a given period of the year; 3 (range): the maximum stocking rate possible without damaging the vegetation or related resources. Carrying capacity may vary from year to year on the same area due to fluctuating forage production.

CAVITY	A hollow in a tree that is used by birds or mammals for roosting and reproduction.
CEQ	See Council of Environmental Quality.
CFR	Code of Federal Regulations.
CHARGEABLE VOLUME	Chargeable volume is all volume that is included in the growth and yield projections for the selected management prescriptions used to arrive at the "allowable sale quantity," based on Regional utilization standards.
CLEARCUTTING	Harvesting of all trees in one cut. It prepares the area for a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as separate age class in planning. Regeneration is obtained through natural seeding, or through planting or direct seeding.
CLEARCUT EQUIVALENT	The portion of a forested area that has had all trees removed via clearcutting in the past and in which the regenerating trees are still small enough that from a hydrological standpoint the area has not recovered to its former water use/water yield balance.
CLIMAX PLANT COMMUNITY	The final or stable biotic community in a developmental series.
CLOSURE	The administrative order that does not allow specified uses in designated areas or on Forest development roads or trails.
CMAI	See Culmination of Mean Annual Increment.
CODE-A-SITE	A method of recording and evaluating dispersed recreation camping sites.
COEFFICIENT (COST, VALUE, YIELD)	The numeric units used to include costs, values, and outputs in the analysis model used in the formulation of the Forest Plan.
COLIFORM BACTERIA	Any of several bacteria found in the large intestine of man and animals, the presence of which indicated fecal pollution.
COLLECTOR ROADS	Roads constructed to serve two or more elements but which do not fit into the other two road categories (arterial or local). Construction costs of these facilities are prorated to the respective element served. These roads serve smaller land areas and are usually connected to a Forest arterial or public highway. They collect traffic from local Forest roads or terminal facilities. The location and standard are

	influenced by both long term multi-resource service needs and travel efficiency. Forest collector roads are operated for constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.
COMMERICAL FOREST LAND (SUITABLE TIMBER LAND)	Land that is producing, or is capable of producing, crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary of Agriculture or the Chief of the Forest Service; (2) where existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity or watershed conditions; and (3) where existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be obtained within 5 years after final harvesting.
COMMERCIAL TIMBER SALES	The selling of timber from National Forest lands for the economic gain of the party removing and marketing the trees.
COMMODITIES	Resources with commercial value; all resource products which are articles of commerce, such as timber, range forage and minerals.
COMMON MATERIALS	See Minerals, Common Variety.
COMMUNITY COHESION	The degree of unity and cooperation within a community in working toward shared goals and solutions to problems.
COMMUNITY STABILITY	The capacity of a community to absorb and cope with change without major hardship to institutions or groups within the community.
CONCERN	See Management Concern.
CONDITION CLASS	A descriptive category of the existing tree vegetation as it relates to size, stocking and age.
CONGRESSIONALLY DESIGNATED AREAS	Areas established by Congressional legislation, such as National Wildernesses, National Wild and Scenic Rivers, and National Recreation Areas.
CONSTRAINT	A confinement or restriction on the range of permissible choices.
CONSUMPTIVE USES	Uses of a resource that reduce the supply. Examples of some consumptive uses of water are irrigation, domestic and industrial water use, grazing, and timber harvest.
CONTINENTAL DIVIDE	The drainage divide between waters flowing to the Atlantic Ocean and the Pacific Ocean.

CORD	A unit of gross volume measurement for stacked roundwood based on external dimensions, generally implies a stack of four feet by four feet vertical cross section and eight feet long, contains 128 stacked cubic feet.
CORDUROY	A method of subgrade reinforcement often used on trails and for some roads whereby logs are placed perpendicular to the traveled way to support a surfacing material.
CORRIDOR (UTILITY CORRIDOR)	A linear strip of land which has ecological, technical, economic, social, or similar advantages over other areas for the present or future location of transportation or utility routes.
COST	The negative or adverse effects or expenditures resulting from an action. Costs may be monetary, social, physical or environmental in nature.
COST EFFICIENCY	The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values but are achieved at specific levels in the least cost manner. Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and rates of return may be appropriate.
COST-SHARE	Refers to the process of cooperating in the joint development of a road system. The document executed through this process, called "Road Right-of-Way Construction and Use Agreement," specifies the terms of developing the transportation system for a specified land area.
COUNCIL ON ENVIRONMENTAL QUALITY	An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews Federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.
COVER/FORAGE RATIO	The ratio of tree cover (usually conifer types) to foraging areas (natural openings, clearcuts, etc.).
CRITICAL HABITAT	Specific areas within the geographical area occupied by a species on which are found those physical and biological features (1) essential to the conservation of the species and (2) which may require special management considerations or protection. Critical habitat shall not include the entire geographic area which can be occupied by the threatened and endangered species.
CUBIC FOOT	The amount of wood volume equivalent to a cube 1 foot by 1 foot by 1 foot.

CULMINATION OF MEAN ANNUAL INCREMENT (CMAI)	The point at which the volume increment for a tree or stand of trees has achieved its highest mean value. Mean annual increment is based on expected growth according to the management intensities and utilization standards assumed in the Forest Plan. The CMAI is calculated by dividing the attained growth (volume) by its corresponding age.
CULTURAL RESOURCES	The physical remains of human activity (artifacts, ruins, burial mounds, petroglyphs, etc.) and conceptual content or context (as a setting for legendary, historic, or prehistoric events, as a sacred area of native peoples, etc.) of an area of prehistoric or historic occupation.
CUTTING CYCLE	For a crop or stand, the planned interval of time between the beginning of one cutting period and the beginning of the succeeding cutting period.

D

DEMAND	The amount of output that users are willing to take at a specific price, time period, and conditions of sale.
DEMAND ANALYSIS	A study of the factors affecting the schedule of demand for a good or service, including the price-quantity relationship, if applicable.
DEPARTURE	A schedule which deviates from the principle of nondeclining flow by exhibiting a planned decrease in the timber sale and harvest schedule at any time in the future.
DEPENDENT COMMUNITIES	Communities whose social, economic, or political life would become discernably different in important respects if market or non-market outputs from the National Forests were cut off.
DEVELOPED RECREATION	Recreation that occurs where improvements enhance recreation opportunities and accommodate intensive recreation activities in a defined area.
DEVELOPED RECREATION SITES	Relatively small, distinctly defined area where facilities are provided for concentrated public use, i.e., campgrounds, picnic areas and swimming areas.
DIAMETER BREAST HEIGHT (DBH)	The diameter of a tree measured 4 1/2 feet above the ground.
DISCOUNT RATE	An interest rate that reflects the cost or time value of money. It is used in discounting future costs and benefits.

DISCOUNTING	An economic adjustment for the time value of money; mathematical reduction of costs and/or benefits which occur in the future to the present time for purposes of comparison.
DISPERSED RECREATION	That portion of outdoor recreation use which occurs outside of developed sites in the unroaded and roaded Forest environment i.e., hunting, backpacking and berry picking.
DISTRICT RANGER	The official responsible for administering the National Forest System Lands on a Ranger District.
DIVERSITY	The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

E

ECONOMICS	The study of how limited resources, goods, and services are allocated among competing uses.
ECOSYSTEM	A complete, interacting system of organisms considered together with their environment (for example; a marsh, a watershed, or a lake.)
ECOTONE	A transition or junction zone between two or more diverse communities (ecosystems).
EDAPHIC	The influence of soils on living organisms, particularly plants, including man's use of the land for plant growth.
EDGE	The more or less well-defined boundary between two or more elements of the environment, i.e., field/woodland.
EFFECTS	Physical, biological, social and economic results (expected or experienced) resulting from achievement of outputs. Effects can be direct, indirect and cumulative.
EFFICIENCY, ECONOMIC	The usefulness of inputs (costs) to produce outputs (benefits) and effects when all costs and benefits that can be identified and valued are included in the computations. Economic efficiency is usually measured using present net value, though use of benefit-cost ratios and rates-of-return may sometimes be appropriate.
ELK HIDING COVER	Vegetation, primarily trees, capable of hiding 90 percent of an elk seen from a distance of 200 feet or less.

ELK SECURITY COVER (EFFECTIVE ELK SECURITY COVER)	Elk hiding cover modified by open roads. The greater the density of open roads within an area, the less effective is the hiding cover in providing security for elk.
ENDANGERED SPECIES	Any species, plant or animal, which is in danger of extinction throughout all or a significant portion of its range. Endangered species are identified by the Secretary of the Interior in accordance with the 1973 Endangered Species Act.
ENDING INVENTORY CONSRAINT (EIC)	Constraint to ensure that the total timber volume left at the end of the planning horizon will equal or exceed the volume that would occur in a managed Forest.
ENVIRONMENTAL ANALYSIS	An analysis of alternative actions and their predictable short and long-term environmental effects which include physical, biological, economic, social, and environmental design factors and their interactions.
ENVIRONMENTAL ASSESSMENT	A concise public document for which a Federal agency is responsible that serves to: (1) Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. (2) Aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary. (3) Facilitate preparation of an environmental impact statement when one is necessary.
ENVIRONMENTAL IMPACT STATEMENT, DRAFT (DEIS)	A detailed written statement as required by Sec. 102(2)(C) of the National Environmental Policy Act.
ENVIRONMENTAL IMPACT STATEMENT FINAL (FEIS)	The final version of the public document required by NEPA. (see above)
EPHEMERAL STREAMS	Streams that flow only as a direct response to rainfall or snowmelt events. They have no baseflow.
EROSION	The group of processes whereby earth or rocky material is worn away by natural sources such as wind, water or ice and removed from any part of the earth's surface.
ESCAPEMENT	The number of adult anadromous fish escaping past commercial and recreational harvest fisheries and other sources of mortality, to upstream spawning areas.

EVEN-AGED MANAGEMENT	The application of a combination of actions that result in the creation of stands in which trees of essentially the same age grow together. Managed even-aged Forests are characterized by a distribution of the stands of varying ages (and, therefore, tree sizes) throughout the Forest area. The difference in ages between trees forming the main canopy level of the stand does not usually exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Cutting methods include clearcutting, shelterwood cutting, and seed tree cutting.
EXTRACTIVE USE	Use of natural resources that removes them from their natural setting.

F

FAMILY UNIT	A camp or picnic spot with table, fireplace, tent pad, and parking spot.
FEE SITE	A Forest Service recreation area in which users must pay a fee. Fee sites must meet certain standards and provide certain facilities as specified in the Forest Service Manual.
FINAL CUT	Removal of the last seed bearers or shelter trees after regeneration is considered to be established under a shelterwood system.
FLOOD PLAIN	The lowland and relatively flat area adjoining inland waters, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.
FORAGE	All browse and nonwoody plants available to livestock or wildlife for feed.
FORB	Any herbaceous plant other than true grasses, sedges or rushes.
FOREST AND RANGELAND RENEWABLE RESOURCES PLANNING ACT OF 1974	An act of Congress which requires the assessment of the Nation's renewable resources and the periodic development of a national renewable resources program. It also requires the development, maintenance and, as appropriate, revision of land and resource management plans for units of the National Forest System (e.g., National Forest).
FOREST LAND	Land at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and not currently developed for non-forest use. Lands developed for non-forest use include areas for crops, improved pasture,

	residential, or administrative areas, improved constructed roads of any width, and adjoining road clearing and powerline clearing of any width.
	The term "occupied" when used to define forest land, will be measured by canopy cover of live forest trees at maturity. The minimum area for classification of forest land will be 1 acre or greater. Unimproved roads, trails, stream and clearings in forest areas are classified as forest if they are less than 120 feet in width.
FOREST LOCAL ROADS	Roads constructed and maintained for, and frequented by, the activities of a given resource element. Some uses may be made by other element activities, but normally maintenance is not affected by such use. These roads connect terminal facilities with Forest collector or Forest arterial roads or public highways. The location and standard usually are determined by the requirement of a specific resource activity rather than by travel efficiency. Forest local roads may be developed and operated for constant or intermittent service, depending on land use and resource management objectives for the area served by the facility.
FOREST SUPERVISOR	The official responsible for administering the National Forest System lands in a Forest Service Administrative unit, which may consist of one or more National Forests or all the Forests within a State.
FOREST SYSTEM ROADS	A road wholly or partly within or adjacent to and serving the National Forest System and which is necessary for the protection, administration and utilization of the National Forest System and the use and developments of its resources.
FORPLAN	A linear programing system used for developing and analyzing Forest planning alternatives.
FOREST-WIDE MANAGEMENT GUIDELINES	An indication or outline of policy or conduct dealing with the basic management of the Forest. Forest-wide management guidelines apply to all areas of the Forest regardless of the other management prescriptions applied.
FSH	Forest Service Handbook.
FSM	Forest Service Manual.
FUEL BREAK	A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire. Fuel breaks are designated or constructed before the outbreak of a fire. Fuel breaks may consist of one or a combination of the following: natural barriers, constructed fuel breaks, manmade barriers.

FUELS	Include both living plants; dead, woody vegetative materials; and other vegetative materials which are capable of burning.
FUELS MANAGEMENT	Manipulation or reduction of fuels to meet Forest protection and management objectives while preserving and enhancing environmental quality.
FUELS TREATMENT	The rearrangement or disposal of natural or activity fuels to reduce the fire hazard.
FULL-SERVICE MANAGEMENT	The administration, operation and maintenance of developed recreation sites to established standards with the objective to provide a pleasant recreation experience for the visitor and exceed the minimum health and safety needs of the visitors.

G

GAME SPECIES	Any species of wildlife or fish for which seasons and bag limits have been prescribed, and which are normally harvested by hunters, trappers, and fisherman under State or Federal laws, codes, and regulations.
GOAL	A concise statement that describes a desired condition to be achieved. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed.
GOODS AND SERVICES	The various outputs, including onsite uses, produced by forest and rangeland renewable resources.
GRAZING ALLOTMENT	See Range Allotment.
GRIZZLY BEAR RECOVERY TEAM	An interagency group designated to remove the grizzly bear from threatened species designation in the lower 48 states.
GROUP SELECTION CUTTING	A cutting method to develop and maintain uneven-aged stands by the removal of small groups of trees to meet a predetermined goal of size distribution and species composition in remaining stands.
GROWING STOCK LEVEL	A relative stand density measure used to guide a management objective such as maximizing timber volume yields or optimizing big game thermal cover.
GUIDELINE	See Standard and Guideline.

H

HABITAT TYPE	An aggregation of all land areas potentially capable of producing similar plant communities at climax.
HABITAT TYPE GROUP	A logical grouping of habitat types to facililtate resource planning and public presentations.
HIDING COVER	Trees of sufficient size and density to conceal animals from view at 300 feet.

I

IMPACT ANALYSIS AREA	The delineated area subject to significant economic and social impacts from Forest Service activities included in an economic or social impact analysis.
IMPROVEMENT CUTTING	Removing trees of undesirable species, form, or condition from the main canopy in stands past the sapling stage to improve the composition and quality.
INDICATOR SPECIES	Species identified in a planning process that are used to monitor the effects of planned management activities on viable populations of wildlife and fish including those that are socially or economically important.
INDIRECT EFFECTS	Secondary effects which occur late in time or in other locations than the inital action or significantly later in time.
INDIRECT OUTPUTS	Outputs caused by the action but which are later in time or farther removed in distance but still reasonably foreseeable.
INDIVIDUAL TREE SELECTION HARVEST	A cutting method to develop and maintain uneven-age stands by the removal of selected trees from specified age classes over the entire stand area in order to meet a predetermined goal of age distribution and species in the remaining stand.
INDUCED OUTPUTS	Outputs in the private sector induced by the direct outputs produced on the Forest.
INDUSTRIAL WOOD	All commercial roundwood products except fuelwood.
INSTREAM FLOWS	The minmum water volume (cubic feet per second) in each stream necessary to meet seasonal streamflow requirements for maintaining aquatic ecosystems, visual quality, recreational opportunities and other uses.

IN-MIGRATION	The movement of human population into an area.
INTEGRATED PEST	A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategy includes the impact of the unregulated pest population on various resource values, alternative regulatory tactics and strategies, and benefit/cost estimates for these alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable.
INTENSIVE GRAZING	Grazing management that controls distribution of cattle and duration of use on the range, usually by fences, so parts of the range are rested during the growing season.
INTER-DISCIPLINARY TEAM (ID TEAM)	A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. Through interaction, participants bring different points of view to bear on the problem.
INTERMEDIATE HARVEST	Any removal of trees from a stand between the time of its formation and the regeneration cut. Most commonly applied intermediate cuttings are release, thinning, improvement, and salvage.
INTERMITTENT STREAM	A stream which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow.
INTERPRETATIVE SERVICES	Visitor information services designed to inform and educate Forest visitors, improving their understanding, appreciation and enjoyment of National Forest resources.
INVENTORY DATA	Recorded measurements, facts, evidence, or observations on Forest resources such as soil, water, timber, wildlife, range, geology, minerals, and recreation which was used to determine the capability and opportunity of the Forest to be managed for those resources.
ISSUE	See Public Issue.

K

"KEY REACHES" OF WATERSHED SYSTEM	A representative stream segment that can be expected to be sensitive to water resource changes and which adequately reflects the effects of management of the stream channel, the water, and their beneficial uses.
KEY SUMMER RANGE	An area that is potentially capable of supporting big game during the summer use period.
KEY WINTER RANGE	The portion of the yearlong range where big game find food and/or cover during severe winter weather.

L

LAND EXCHANGE	The conveyance of non-Federal Land or interests to the United States in exchange for National Forest System land or interests in land.
LANDING	Any place where round timber is assembled for further transport.
LANDLINE LOCATION	The legal identification, accurate location, and description property boundaries.
LANDTYPE	An inventory map unit with relatively uniform potential for a defined set of land uses. Properties of soils, landform, natural vegetation and bedrock are commonly components of landtype delineation used to evaluate potentials and limitations for land use.
LANDTYPE GROUP	A logical grouping of landtypes that facilitate resource planning.
LEASABLE MINERALS	See Minerals, Leasable.
LEVEL I FIRE ANALYSIS	General fire management analysis to provide historical information that assists the interdisciplinary team in the analysis of the management situation and formulation of alternatives for the Forest Plan.
LEVEL II FIRE ANALYSIS	An analytical process which guides the implementation of fire management activities of the Forest Plan.

LINEAR PROGRAMMING	A mathematical method used to determine the optimal distribution of limited resources between competing demands when both the objective (e.g., profit or cost) and the restrictions on its attainment are expressible as a system of linear equalities or inequalities (e.g., y=a+bx).
LIMITED SURFACE USE STIPULATION	A mineral lease clause, which, if attached to a mineral lease, prohibits surface disturbing activities on the lease pending submission of a surface use and operations plan which is satisfactory to the BLM and the surface management agency for protection of special existing or planned uses. This stipulation may, when site-specific operations are proposed and analyzed, be modified if other less stringent mitigation is determined to be sufficient to protect the other resources.
LOCAL DEPENDENT INDUSTRIES	Local industries relying on National Forest outputs for economic activity.
LOCATABLE MINERALS	See Minerals locatable.
LOESS	A uniform and unstratified fine sand or silt transported by wind.
LONG-TERM SUSTAINED YIELD CAPACITY (LTSY)	The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified intensity of management consistent with multiple use objectives

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M

M	Thousand
MM	Million
MAUM	Thousand Animal Unit Months.
MBF	Thousand Board Feet
MMBF	Million Board feet
MMCF	Million Cubic feet
MANAGEMENT ACTION	Any activity undertaken as part of the administration of the Forest.

MANAGEMENT AREA	An aggregation of capability areas which have common management direction and may be noncontiguous in the Forest. Consists of a grouping of capability areas selected through evaluation procedures and used to locate decisions and resolve issues and concerns.
MANAGEMENT CONCERN	An issue, problem, or a condition which constrains the range of management practices identified by the Forest Service in the planning process.
MANAGEMENT DIRECTION	A statement of multiple-use and other goals and objectives, the associated management prescriptions, and standards and guidelines for attaining them.
MANAGEMENT EFFECTS	Physical, biological, social and economic responses to management practices.
MANAGEMENT EMPHASIS	A management practice or combination of management practices designed to stress production of a particular type of output or mix of outputs.
MANAGEMENT INTENSITY	A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.
MANAGEMENT OPPORTUNITY	A statement of general actions, measures, or treatments that address a public issue or management concern.
MANAGEMENT PRACTICE	A specific activity, measure, course of action, or treatment. Proposed management practices are those scheduled in the first decade of Forest Plan implementation. Probable management practices are those scheduled in the second decade of Forest Plan implementation.
MANAGEMENT PRESCRIPTION	Management practices and intensities selected and scheduled for application on a specific area to attain multiple use and other goals and objectives.
MANAGEMENT STANDARDS AND GUIDELINES	See Standard and Guideline.
MARKET VALUE	The unit price of an output normally exchanged in a market after at least one stage of production, expressed in terms of what people are willing to pay as evidenced by market transactions.
MASS MOVEMENT	Downslope movement of a portion of the land's surface, i.e., a single landslide or the gradual simultaneous, downhill movement of the whole mass of loose earth material on a slope face.

MATURE TIMBER	Individual trees or stands of trees that in general are at their maximum rate in terms of the physiological processes expressed as height, diameter, and volume growth.
MAXIMUM RESOURCE POTENTIAL	The maximum possible output of a given resource limited only by its inherent physical and biological characteristics.
MEAN ANNUAL INCREMENT	The total volume increase in a tree or stand of trees up to a given age, divided by that age.
MINERAL ENTRY	The filing of a mining claim on Federal land to obtain the right to mine any locatable minerals it may contain. Also the filing for a mill site on Federal land for the purpose of processing off-site locatable minerals.
MINERAL WITHDRWAL	A formal designation by the Secretary of Interior which precludes entry or disposal of mineral commodities under the mining and/or mineral leasing laws.
MINERAL EXPLORATION	The search for valuable minerals.
MINERAL PRODUCTION	The extraction of mineral deposits.
MINERALS, COMMON VARIETY	Deposits of sand, stone, gravel, etc. of widespread occurrence and not having distinct or special value. These deposits are used generally for construction and decorative purposes and are disposed of under the Materials Act of 1947.
MINERALS, LEASABLE	Those minerals which are disposed of under authority of the various mineral leasing acts. Minerals include coal, oil, gas, phosphate, sodium, potassium, oil shale, sulfur (in Louisiana and New Mexico), and geothermal steam.
MINERALS, LOCATABLE	Those minerals which are disposed of under the general mining laws. Included are minerals such as gold, silver, lead, zinc and copper which are not classed as leasable or salable.
MINIMUM MANAGEMENT REQUIREMENTS	Standards for resource protection, vegetative manipulation, silviculturist practices, even-aged management, riparian areas, soil and water and diversity, to be met in accomplishing National Forest System goals and objectives (see 36 CFR 219.27).
MINIMUM RESOURCE STANDARDS	Specific conditions of individual resources which must be maintained in order to meet minimum management requirements (36 CFR 219.27) and/or other legal requirements.

MINIMUM STREAMFLOWS	A specified level of flow through a channel that must be maintained by the users of a stream for biological, physical, or other purposes.
MINIMUM VIABLE	See Viable Population.
MINING CLAIMS	A geographic area of the public lands held under the general mining laws in which the right of exclusive possession is vested in the locator of a valuable mineral deposit. Includes lode claims, placer claims, mill sites and tunnel sites.
MITIGATE	To lessen the severity.
MITIGATION	Avoiding or minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact by preservation and maintenance operations during the life of the action.
MODIFICATION (VQO)	See Visual Quality Objective (VQO).
MONITORING AND EVALUATION	The periodic evaluation on a sample basis of Forest Plan management practices to determine how well objectives have been met and how closely management standards have been applied.
MONTANA WILDERNESS STUDY ACT AREAS	Those areas that are required to be studied for their wilderness suitability under the Montana Wilderness Study Act of 1977 (Public Law 95-150).
MOUNTAIN PINE BEETLE	A species of Bark Beetle that spends the major portion of their life cycle in a tree's cambium layer. Through a combination of the insect feeding on the cambium layer and the introduction of fungi which stop the resin flow, the tree is girdled and killed.
MULTIPLE USE	The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

N

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)	An act which encourages productive and enjoyable harmony between man and his environment; promotes efforts to prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; enriches the understanding of the ecological systems and natural resources important to the Nation; and establishes a Council on Environmental Quality.
NATIONAL FOREST LANDSCAPE MANAGMENT SYSTEM	The planning and design of the visual aspects of multiple use land management in such ways that the visual effects maintain or upgrade man's psychological welfare.
NATIONAL FOREST MANAGEMENT ACT (NFMA)	A law passed in 1976 as amendments to the Forest and Rangeland Renewable Resources Planning Act that requires the preparation of Regional and Forest plans and the preparation of regulations to guide that development.
NATIONAL FOREST SYSTEM	All national forest lands reserved or withdrawn from the public domain of the United States, all national forest lands acquired through purchase, exchange, donation, or other means, the national grasslands and land utilization projects administered under Title III.
NATIONAL RECREATION TRAILS	Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses.
NATIONAL REGISTER OF HISTORIC PLACES	A listing maintained by the National Park Service of areas which have been designated as being of historical significance. The Register includes places of local and State significance as well as those of value to the Nation as a whole.
NATIONAL WILD AND SCENIC RIVER SYSTEM	Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act for preservation of their free-flowing condition.
NATIONAL WILDERNESS PRESERVATION SYSTEM	All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.
NONDECLINING YIELD	See Nondeclining Flow.

NEPA	See National Environmental Policy Act.
NFMA	See National Forest Management Act.
NET PUBLIC BENEFITS	An expression used to signify the overall long-term value to the Nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.
NO ACTION ALTERNATIVE	The management direction, activities, outputs, and effects most likely to exist in the future if the current plan would continue unchanged.
NONCHARGEABLE VOLUME	All volume that is not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity. It also includes all volume removed from nonsuitable lands.
NONCOMMODITY OUTPUTS	See Output, Nonmarket.
NONCONSUMPTIVE USE	Those uses of resources that do not reduce the supply. Nonconsumptive uses of water include hydroelectric power generation, boating, swimming, etc.
NONDECLINING FLOW	The principle that the quantity of timber planned for sale or harvest for any future decade must be equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity.
NONEXTRACTIVE USE	Use which does not remove a resource from its natural setting.
NONGAME	Species of animals which are not managed as a sport hunting resource.
NONPOINT SOURCE POLLUTION	Sources from which the pollutants discharged are: (1) induced by natural processes, including precipitation, seepage, percolation, and runoff; (2) not traceable to any discrete or identifiable facility and (3) better controlled through the utilization of Best Management Practices, including process and planning techniques. This includes natural pollution sources not directly or indirectly caused by man.

NONSTOCKED	A stand of trees or aggregation of stands that have a stocking level below the minimum specified for meeting the prescribed management objectives.
NO-SURFACE OCCUPANCY STIPULATION	A mineral lease clause which, if attached to a mineral lease prohibits the lessee from constructing roads, well pads or otherwise occupying the land surface unless, upon site-specific review, it is determined by the authorized officer that the requirements of the stipulation can be modified if other less stringent mitigation is determined to be sufficient to protect the other resources.
NOTICE OF INTENT	Written notice to the affected District Ranger by those who intend to engage in mining activity on the Forest of proposed prospecting, exploration, mining, and mineral processing activities.

O

OBJECTIVE	A concise time-specific statement of measurable planned results that respond to preestablished goals. An objective forms the basis for further planning, to define the precise steps to be taken and the resources to be used in achieving identified goals.
OBJECTIVE FUNCTION	A term used in linear programming describing the criteria to be optimized. Examples of objective functions are: maximize present net value, minimize cost or maximize timber.
OFF-ROAD VEHICLE	Any vehicle capable of being operated off an established road or trail, e.g., motorbikes, four-wheel drives, and snowmobiles.
OLD GROWTH TIMBER	See Overmature Timber.
OPPORTUNITY COST	An opportunity cost is value foregone. In this analysis it is a cost calculated as the difference between present net value of the alternative and the present net value of the maximum PNV increment.
OPTIMUM	The greatest level of production that is consistent with other resource requirements as constrained by environmental, social and economically sound conditions.

OUTPUT	A good, service, or on-site use that is produced from forest and rangeland resources. Definitions of Forest and rangeland output definitions, codes and units measure are contained in the Management Information Handbook (FSH 1309.11). Examples are: X06-Softwood Sawtimber Production - MBF; X80-Increased Water Yield - Acre Feet; W01-Primitive Recreation Use - RVD's.
OUTPUT, CONTROLLED	The amount of an output which management has the legal and practical ability to control with management activities.
OUTPUT, DIRECT	An output that fulfills specified objectives of the policy, program, or project being evaluated.
OUTPUT, INDUCED	A good, service, or on-site use which is incidental to the objectives of the resource activity. An example is the timber harvest activity which produces a primary output of board feet of timber and an induced output of acres of improved wildlife habitat because of the harvest activity.
OUTPUT, MARKET	A good, service, or on-site use that can be purchased at a price.
OUTPUT, NON-CONTROLLED	The amount of an output which will occur regardless of management activity.
OUTPUT, NONMARKET	A good, service, or on-site use not normally exchanged in a market.
OUTPUT, PRIMARY	A good, service, or on-site use that results from the completion of an activity, project or program that meets the specific objectives of the resource. Examples are board feet of timber, recreation visitor days, etc.
OVER-THE-COUNTER SALE	The selling of Forest products without bidding, as requested by the general public, usually for products such as fuelwood, corral poles, ornamental shrubs, etc.
OVERMATURE TIMBER	Individual trees or stands of trees that in general are past their maximum rate in terms of the physiological processes expressed as height, diameter and volume growth.
OVERSTORY	That uppermost canopy of the forest when there is more than one level of vegetation.
OVERTHRUST BELT	A complex geologic feature, extending from Alaska to Mexico, which resulted from compressional stresses within the earth, and which is characterized by abundant thrust faults. This zone passes through and includes all of western Montana.

P

PARTIAL RETENTION (VQO)	See Visual Quality Objective (VQO).
PARTICULATES	Small particles suspended in the air and generally considered pollutants.
PATENTED MINING CLAIMS	A patent is a document which conveys title to land. When patented, a mining claim becomes private property and is land over which the United States has no property rights, except as may be reserved in the patent. After a mining claim is patented, the owner does not have to comply with requirements of the General Mining Law or implementing regulations.
PERENNIAL STREAMS	Streams that flow continuously throughout most years.
PAYMENT IN LIEU OF TAXES	Payments to local or State governments based on ownership of Federal land and not directly dependent on production of outputs or receipt sharing. Specifically, they include payments made under the Payments in Lieu of Taxes Act of 1976 by the U.S. Department of the Interior.
PERMITTED GRAZING	Use of a National Forest range allotment under the terms of a grazing permit.
PERSON-AT-ONE-TIME	A recreation capacity measurement term indicating the number of people that can use a facility or area at one time.
PERSON YEAR (WORK YEAR)	A person year equals 2,087 hours of work time. A person year may be one person working yearlong or several persons filling seasonal positions.
PLAN OF OPERATIONS	A written plan describing mining and mineral processing activities that will likely cause a significant surface disturbance. The plan is prepared by those engaged in activities, such as prospecting, exploration or mining, in the National Forest. This plan must be approved by a Forest Officer.
PLANNING AREA	The area of the National Forest System covered by a Regional or Forest Plan.
PLANNING CRITERIA	Standards, tests, rules, and guidelines by which the planning process is conducted and upon which judgments and decisions are based.

PLANNING HORIZON	The overall time period considered in the planning process that spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions. In the Lolo Forest planning process, this is 120 years.
PLANNING PERIOD	A time interval for which inputs and outputs are identified in a planning process. Current RPA and National Forest Plan intervals are 5 and 10 years, respectively.
PLANNING RECORDS	Documents and files that contain detailed information and decisions made in developing the Forest Plan. Available at the Forest Supervisor's Office.
PNV	See Present Net Value.
POLETIMBER TREES	Live trees of commercial species at least five inches in diameter at breast height but smaller than sawtimber size, and of good form and vigor.
POLICY	A guiding principle upon which is based a specific decision or set of decisions.
POTENTIALLY (TENTATIVELY) SUITABLE LAND	Forest land (as defined in CFR 219.3) for which technology is available that ensures timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be restocked (CFR 219.14); and which is available for timber management.
PRACTICE	See Management Practice.
PRECOMMERCIAL THINNING	The selective felling, deadening, or removal of trees in a young stand primarily to accelerate diameter increment on the remaining stems, maintain a specific stocking or stand density range, and improve the vigor and quality of the trees that remain.
PREDATOR	One that preys, destroys, or devours - usually an animal that lives by preying on other animals.
PREPARATORY CUT	Removal of trees near the end of a rotation so as to permanently open the canopy and enlarge the crowns of seed bearers, with a view to improving conditions for seed production and natural generation, as typically in shelterwood systems.
PRESCRIBED BURNING	The intentional application of fire to wildland fuels in either their natural or modified state under such conditions as allow the fire to be confined to a predetermined area and at the same time to produce the intensity of heat and rate of spread required to further certain planned objectives (i.e., silviculture, wildlife management, etc.).

PRESCRIBED FIRE	A fire burning under specified conditions which will accomplish planned objectives in strict compliance with an approved plan and the conditions under which the burning takes place and the expected results are specific, predictable, and measurable.
PRESCRIPTION	See Management Prescription.
PRESENT NET VALUE (PNV)	The difference between the discounted value (benefits) of all outputs to which monetary value or established market prices are assigned and the total discounted costs of managing the planning area.
PRESENT NET WORTH	The discounted value of price times quantity less cost.
PRESERVATION (VQO)	See Visual Quality Objectives (VQO).
PRESUPPRESSION	Activities required in advance of fire occurrence to ensure effective suppression action. Includes (1) recruiting and training fire forces; (2) planning and organizing attack methods; (3) procuring and maintaining fire equipment; and (4) maintaining structural improvements necessary for the fire program.
PRICED OUTPUTS	Resource outputs that have market or assigned dollar values.
PRIMITIVE RECREATION SETTING	A classification of the recreation opportunity spectrum that characterizes an essentially unmodified natural environment of a size or remoteness that provide significant opportunity for isolation from the signs and sounds of man and a feeling of vastness of scale. Visitors have opportunity to be part of the natural environment, encounter a high degree of challenge and use a maximum of outdoor skills but have minimum opportunity for social interaction.
PRIMITIVE ROADS	Roads that came into existence with little regard for grade or drainage control, or were abandoned facilities from some prior use. They are sometimes created merely by repeated driving over an area. Such roads are rarely, if ever, maintained and then only by users. These roads are single lane, usually with native surfacing, and sometimes passable with four-wheel drive vehicles only, especially in wet weather.
PRIMITIVE SETTING	A large area (generally at least 5,000 acres) at least three miles from all roads, railroads or trails with motorized use. The area is essentially a natural environment unmodified by man.
PRODUCTION POTENTIAL	The capability of the land or water to produce life-sustaining features (forage, cover, aquatics).

READEX FICHE

PRODUCTIVITY	See Site Productivity.
PROGRAM DEVELOPMENT AND BUDGETING	The process by which activities for the Forest are proposed and funded.
PROPOSED ACTION	In terms of the National Environmental Policy Act, the project, activity, or action that a Federal agency intends to implement or undertake and which is the subject of an environmental analysis.
PRUNING	The removal of live or dead branches from standing trees.
PUBLIC ACCESS	Usually refers to a road or trail route over which a public agency claims a right-of-way available for public use.
PUBLIC INVOLVMEMENT	A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) Informing the public about Forest Service activities, plans, and decisions, and (2) Encouraging public understanding about and participation in the planning processes which lead to final decision making.
PUBLIC ISSUE	A subject or question of widespread public interest identified through public participation relating to management of National Forest System lands.

R

RANGE ALLOTMENT	A designated area of land available for livestock grazing upon which a specified number and kind of livestock may be grazed under a range allotment management plan. It is the basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.
RANGE, TRANSITORY	See Transitory Range.
RANGELAND	Land on which the climax vegetation (potential natural plant community) is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing and browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain forb and shrub communities. It also includes areas seeded to native or adapted introduced species that are managed like native vegetation.
RANGER DISTRICT	Administrative subdivision of the Forest supervised by a District Ranger.
RARE II	See Roadless Area Review and Evaluation II.

REAL DOLLAR	A monetary value that compensates for inflation.
RECEIPTS	Money collected from timber stumpage, livestock grazing, campgrounds, special use permits, and oil and gas lease rentals and royalties, and returned to the federal treasury.
RECORD OF DECISION	A document separate from but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision on the proposed action.
RECREATION CAPACITY	The number of people that can take advantage of a recreation opportunity at any one time without substantially diminishing the quality of the experience sought after.
RECREATION EXPERIENCE LEVEL	A concept used in recreation management to delineate the range of opportunities for satisfying basic recreation needs of people. A scale of five experience levels ranging from "primitive" to "highly developed" is planned for the National Forest System.
RECREATION INFORMATION MANAGEMENT (RIM)	The Forest Service system for recording recreation facility condition and use.
RECREATION LIVESTOCK USE	The use of an area by animals, such as horses and mules, which are used primarily in conjunction with recreation activities.
RECREATION MANAGEMENT AREA	An area of several thousand acres in which the management emphasis is on recreation and in which direction is given to establish a Recreation Area Management Plan.
RECREATION OPPORTUNITIES	The combination of recreation settings, activities, and experiences provided by the Forest.
RECREATION OPPORTUNITY GUIDE	A catalogue describing the recreation activities available on a particular Ranger District.
RECREATION OPPORTUNITY SPECTRUM (ROS)	A system for planning and managing recreation resources that recognizes recreation activity opportunities, recreation settings, and recreation experiences along a spectrum or continuum.
RECREATION PREFERENCE TYPE (RPT)	A term used to indicate the types of recreation experiences sought after by Forest users. They are overlapping portions of the total recreation preferences spectrum that the public may express demands for.

	RPT I. Orientations toward using natural, unmodified environment for the appreciation and understanding of natural phenomena; as a source of intellectual and/or physical challenges; for seeking solitude; and for esthetic stimulations.
	RPT II. Orientations toward using natural or semiprimitive environment in searching for and extraction of indigenous fish and/or game species, rocks, minerals, edible plants, etc., and for enjoyment of the physical surroundings in which such extractable objects are found.
	RPT III. Orientations toward using semiprimitive, lightly developed areas for relaxing in natural surroundings; as a source of tranquility and freedom from tension; and for esthetic stimulation.
	RPT IV. Orientation toward using moderately developed areas and surrounding environment for intentional social interaction and group learning experiences.
	RPT V. Orientations toward using highly developed areas for social interactions with many other people and for pursuits which allow for the expression of learned physical abilities.
RECREATION RESIDENCE	A house or cabin on National Forest land for seasonal recreational use that is not the primary residence of the owner.
RECREATION TYPES	Developed Recreation - The type of recreation that occurs where modifications (improvements) enhance recreation opportunities and accommodate intensive recreation activities in a defined area. Dispersed Recreation - That type of recreation use related to and in conjunction with roads and trails that requires few if any improvements and may occur over a wide area. Activities tend to be day-use oriented and include hunting, fishing, berrypicking, off-road vehicle use, hiking, horseback riding, picniking, camping, viewing scenery, snowmobiling, and many others.
RECREATION VISITOR DAY (RVD)	One visitor day equals 12 hours (one person for 12 hours, or 12 people for 1 hour, or any combination thereof).
REDUCED SERVICE MANAGEMENT	The administration, operation and maintenance of developed recreation sites to established standards with the objective to meet minimum health and safety needs of the visitor and keep the site open to public use.
REFORESTATION	The renewal of forest cover by seeding, planting, and natural means.

REGENERATION	The renewal of a tree crop, whether by natural or artificial means. This term may also refer to the crop itself.
REGIONAL FORESTER	The official responsible for administering a single Region of the Forest Service.
REGIONAL GUIDE	A document developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and established management standards and guidelines for National Forest System lands of a given Region to the Forests within a given Region. It also disaggregates the RPA objectives assigned to the Region to the Forests within that Region.
REGULATED	The commercial forest land that is organized for timber production under the principle of sustained yield. The harvest of timber from this land is regulated to achieve multiple long range objectives, such as maintaining setting for recreational activities, rotating forage production areas and wildlife habitat, increasing water production yield, and increasing the growth and utilization of timber for the Nation's supply.
REGULATIONS	Refers to the Code of Federal Regulations for implementing the National Forest Management Act, 36 CFR, Part 219.
RENEWABLE RESOURCES	Resources that are possible to use indefinitely, when the use rate does not exceed the ability to renew the supply. However, in the RPA program, the term is used to describe those matters within the scope of responsibilities and authorities of the Forest Service as required by the Forest and Rangeland Renewable Resouces Planning Act of 1974. Consequently, the renewable resources include: timber, range, minerals, wildlife and fish, water, recreation, and wilderness.
RENEWABLE RESOURCES ASSESSMENT	An appraisal of the Nation's renewable resources that recognizes their vital importance and the necessity for long-term planning and associated program development. The Assessment meets the requirements of Section 3 of the Forest and Rangeland Renewable Resources Planning Act and includes analysis of present and anticipated uses, demands, and supplies of the renewable resources; a description of Forest Service programs and responsibilities; and a discussion of policy considerations, laws, and regulations.
RENEWABLE RESOURCES PROGRAM	The program for management and administration of the National Forest Service System, for Research, for Cooperative State and Private Forest Service programs, and for conduct of other Forest Service activities in accordance with Section 4 of the Forest and Rangeland Renewable Resources Planning Act.

RESOURCE ALLOCATION MODEL	A mathematical model using linear programing which will assign prescriptions to land areas and schedule implementation of those prescriptions simultaneously. The end purpose of the model is to find a schedule and prescription assignment that meets the goals of the Forest and optimizes some objective function such as "maximize PNV".
RESOURCE ELEMENT	A collection of activities from the various operating programs required to accomplish the Forest Sevice mission and which fulfill statutory or Executive requirements. There are seven resource elements: Recreation, Wilderness, Wildlife and Fish, Range, Timber, Water, and Minerals.
RESEARCH NATURAL AREA	An area in as near a natural condition as possible, which exemplifies typical or unique vegetation and associated biotic, soil, geologic, and aquatic features. The area is set aside to preserve a representative sample of an ecological community primarily for scientific and educational purposes; commercial and general public use is not allowed.
RETENTION (VQO)	See Visual Quality Objectives (VQO).
RIGHT-OF-WAY	Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project facility passing over, upon, under, or through such land.
RIPARIAN AREAS	Areas with distinctive resource values and characteristics that are comprised of an aquatic ecosystem and adjacent upland areas that have direct relationships with the aquatic system. This includes floodplains, wetlands, and all areas within a horizontal distance of approximately 100 feet from the normal high water line of a stream channel, or from the shoreline of a standing body of water.
RIPARIAN ECOSYSTEM	A transition between the aquatic ecosystem and the adjacent upland terrestrial ecosystem. It is identified by soil characteristics and by distinctive vegetative communities that require free or unbounded water.
ROAD CREDITS	Credits earned by timber purchasers and which are applied toward the sale price of timber in exchange for building the roads needed for access.
ROAD MAINTENANCE LEVELS	Road maintenance levels are as follows: Level 1: Basic custodial care as required to protect the road investment and to see that damage to adjacent land and resources is held to a minimum. The road is not normally open to traffic.

	Level 2: Same basic maintenance as Level 1 plus logging out, brushing out, and restoring the road prism as neccessary to provide passage. Route markers and regulation signs are in place and useable. Road is open for limited passage of traffic, which is usually administrative use, permitted use, and/or specialized traffic.
	Level 3: Road is maintained for safe and moderately convenient travel suitable for passanger cars. Road is open for public travel, but has low traffic volumes except during short periods of time (e.g., hunting season).
	Level 4: At this level, more consideration is given to the comfort of the user. Road is usually surfaced with aggregate or is paved and is open for public travel.
	Level 5: Safety and comfort are important considerations for these roads which are open to public traffic and generally receive fairly heavy use (100 Average Daily Traffic or more). Roads have an aggregate surface or are paved.
ROAD MANAGEMENT	The combination of both traffic and maintenance management operations. Traffic management is the continuous process of analyzing, controlling and regulating uses to accomplish National Forest objectives. Maintenance management is the perpetuation of the transportation facility to serve intended management objectives.
ROADED NATURAL APPEARING RECREATION SETTING	A classification on the recreation opportunity spectrum where timber harvest or other surface use practices are evident. Motorized vehicles are permitted on all or parts of the road system.
ROADLESS AREA	A National Forest area which (1) is larger than 5000 acres or, if smaller than 5000 acres, contiguous to a designated wilderness or primitive area; (2) contains no roads and (3) has been inventoried by the Forest Service for possible inclusion in the wilderness preservation system.
ROADLESS AREA REVIEW AND EVALUATION (RARE) II	A comprehensive process, instituted in June 1977, to identify roadless and undeveloped land areas in the National Forest System and to develop alternative uses for both wilderness and other resource management.
ROTATION	The planned number of years between the formation or generation of trees and their harvest at a specified stage of maturity.
ROUNDWOOD	The volume of logs or other round products required to produce lumber, plywood, woodpulp, paper, or other similar products.

RPA	See Forest and Rangeland Renewable Resources Planning Act of 1974
RURAL RECREATION SETTING	A classification on the recreation opportunity spectrum that is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high.

S

SALE SCHEDULE	See Base Sale Schedule.
SALVAGE HARVEST	The cutting of trees that are dead, dying, or deteriorating (e.g., because they are overmature or materially damaged by fire, wind, insects, fungi, or other injurious agencies) before they lose their commercial value as sawtimber.
SANITATION HARVEST	The removal of dead, damaged, or susceptible trees, essentially to prevent the spread of pests or pathogens and so promote forest hygiene.
SAWTIMBER	Trees containing at least one 12-foot sawlog or two noncontiguous 8-foot logs, and meeting regional specifications for freedom from defect. Softwood trees must be at least 9 inches in diameter and hardwood trees 11 inches in diameter at breast height.
SCENIC EASEMENT	A legal interest in the land of another which allows the easement holder specified uses or rights without actual ownership of the land; in this case, control of the use of land adjacent to public highways, parks, and rivers. It may provide something attractive to look at within the easement area, an open area to look through to see something attractive beyond the easement itself, or a screen to block out an unsightly view beyond the easement area.
SCOPING PROCESS	An early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to the proposed action. Identifying the significant environmental issues deserving of study and deemphasizing insignificant issues, narrowing the scope of the environmental impact statement accordingly. (Ref. CEQ regulations, 40 CFR 1501.7).
SEDIMENT	Solid material, both mineral and organic, that is in suspension, being transported, or has been moved from its site of origin by air, water, gravity, or ice.

SEED TREE CUTTING	The removal in one cut of most of the mature trees from an area, leaving only a small number of desirable trees to provide seed for regeneration.
SEEDLING/ SAPLING	A size category for forest stands in which trees less than 5 inches in diameter are the predominant vegetation.
SEISMIC EXPLORATION	Seismic exploration is used to map underground geological features to obtain information on the earth's subsurface and to locate areas where accumulations of oil and gas might occur. Seimic waves, generated at or near the surface, penetrate the earth's crust and reflect from subsurface rock layers back to the surface. The geophysicist receives a printed record or seismograph from which is measured the depth to various strata and from which subsurface structures with a potential for oil and gas accumulation can be determined such as faults, anticlines, and folds. Portable - Where access limitations, topography, or other restraints prevent use of trucks, portable operations can be performed. Two portable techniques exist for collecting data. These are: (1) Surface charge programs involve the detonation of a series of as much as 50 to 100 pounds of explosives at shot points located at intervals along the seismic line. Surface charges can be placed directly on the ground, on snow, or on a variety of stakes or platforms. All necessary equipment to conduct the operation is transported by helicopters and then conveyed by foot travel. (2) Various kinds of portable drills can be backpacked or delivered by helicopter to the area. A shallow subsurface portable program would involve drilling a pattern of approximately 16 holes about 4 inches in diameter up to 50 feet deep per mile of line. At this depth, a 10 to 40 pound charge of explosive is placed and detonated. Recording cables and geophones are laid out by foot travel. With both of these portable techniques, shock waves generated by detonation are received and transmitted via geophones and cable to a recording device. Portable methods are generally used on the Forest. Conventional - The conventional method of collecting seismic data includes the use of truck-mounted drills and vehicle-supported crews and generally involves off-road travel. This technique involves drilling 5 to 18 5-inch

diameter holes per mile to a depth of 180 to 200 feet. At this depth, a 10 to 100 pound explosive charge is placed and detonated. Shock waves are received and transmitted via geophones and cable to a truck-mounted recording device. Due to terrain restrictions, this method has limited application on the Forest.

Vibroseis - The vibroseis technique involves using truck-mounted hydraulic pads which generate energy waves through vibration rather than explosives. The vibrator method typically consists of four large trucks each equipped with a vibrator (a steel slab weighing about three tons) mounted between the front and back wheels. The vibrator pads (about 4 feet square) are lowered to the ground and vibrators on all trucks are triggered electronically from the recorder truck. Energy waves are received and transmitted via cable and geophones to a recorder truck. After the information is recorded, the trucks move forward a short distance and the process is repeated. The vibroseis operation is usually limited to roads and gentle terrain.

SELECTION CUTTING	The annual or periodic removal of trees as part of a silvicultural system. Cutting can involve individual trees or small groups of trees to meet a predetermined goal of size and species composition in the remaining stand.
SEMI-PRIMITIVE RECREATION SETTING	A classification on the recreation opportunity spectrum that characterizes a predominately natural or natural appearing environment of a moderate to large size. Concentration of users is low, but there is often evidence of other area users. The area is managed in such a way that minimum onsite controls and restrictions may be present, but are subtle.
SENSITIVE SPECIES	Those plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations.
SEQUENTIAL BOUNDS	A set of constraints used in linear program models to establish the relationship of the quantity of an output to preceding and succeeding quantities of that output (e.g., the forage production in one time period cannot increase or decrease over ten percent from the forage production of the previous time period).
SERAL	A biotic community which is developmental; a transitory stage in an ecologic succession.
SHELTERWOOD CUTTING	The removal of a stand of trees through a series of cuttings designed to establish a new crop with seed and protection provided by a portion of the stand.

SILVICULTURAL EXAMINATION	The process used to gather the detailed in-place field data needed to determine management opportunities and direction for the timber resource within a small subdivision of a forest area such as a stand.
SILVICULTURAL SYSTEMS	A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. It includes all cultural management practices performed during the life of the stand such as regeneration cutting, fertilization thinning, improvement cutting, and use of genetically improved tree seeds and seedlings to achieve multiple resource benefits. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of Forest they produce.
SITE PREPARATION	A general term for a variety of activities that remove competing vegetation, slash, and other debris that may inhibit the reforestation effort.
SITE PRODUCTIVITY	Production capability of specific areas of land.
SLASH	The residue left on the ground after felling and other silvicultural operations and/or accumulating there as a result of storm, fire, girdling, or poisoning of trees.
SMALL GAME	Birds and small mammals normally hunted or trapped.
SNAG	A standing dead tree usually greater than 5 feet in height and 6 inches in diameter at breast height.
SOCIAL DIVERSITY	The variety of choices people have in shaping current and future activities in their environment.
SOCIAL ORGANIZATION	The structure of a society described in terms of institutions, community cohesion, and community stability.
SOCIAL STABILITY	The degree of control people have in protecting the cultural strength within their environment and managing changes affecting their future activities.
SOCIAL VARIABLE	A variable that measures the social impact of Forest Service management alternatives. Examples include population statistics, types of institutions, and personal opinion as reflected in attitudes or as demonstrated by behavior.
SOFT SNAG	A standing dead tree from which the leaves and most of the branches have fallen and which has started to rot internally.

SOIL PRODUCTIVITY	The capacity of a soil to produce a specific crop such as fiber and forage, under defined levels of management. It is generally dependent on available soil moisture and nutrients and length of growing season.
SPECIAL-USE PERMIT	A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.
STAGNATION	A condition where plant growth is markedly reduced or even arrested through, e.g., competition, state of the soil, or disease.
STAND	A community of trees or other vegetative growth occupying a specific area and sufficiently uniform in composition (species), age, spatial arrangement, and condition as to be distinguishable from the other growth on adjoining lands, so forming a silvicultural or management entity.
STANDARD AND GUIDELINE	An indication or outline of policy or conduct.
STIPULATIONS	Requirements that are part of the terms of a mineral lease. Some stipulations are standard on all Federal leases. Other stipulations may be applied to the lease at the discretion of the surface management agency to protect valuable surface resources and uses.
STOCKING	A measure of timber stand density as it relates to the optimum or desired density to achieve a given management objective.
STREAM ORDER	A measure of the position of a stream in the hierarchy of tributaries. (Stream as referenced here refers to perennial streams.) a. First-order streams are unbranched streams, that is they have no tributaries. b. Second-order streams are formed by the confluence of two or more first-order streams. They are considered second-order until they join another second-order or larger stream. c. Third-order streams are formed by the confluence of two or more second-order streams. They are considered third-order until they join another third-order or larger stream.
SUBDIVISIONS	Areas of previously undeveloped land divided into individual homesites and/or blocks of lots with streets or roads and open spaces.

SUCCESSIONAL STAGE	A phase in the gradual supplanting of one community of plants by another.
SUITABILITY	The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.
SUITABILITY ANALYSIS	Process of identifying National Forest lands to be managed for timber production. Stage I identifies the biologically capable, administratively available, and technically suitable lands. Stage II consists of an economic analysis of costs and benefits of timber management on the lands identified in Stage 1. Stage III provides the final assignment of suitable lands based on Forest objectives and economic efficiency.
SUITABLE FOREST LAND	Forest land (as defined in CFR 219.3) for which technology is available that will ensure timber production without irreversible resource damage to soils, productivity, or watershed conditions; for which there is reasonable assurance that such lands can be adequately restocked (as provided in CFR 219.14); and for which there is management direction that indicates that timber production is an appropriate use of that area.
SUPPLY	The amount of an output that producers are willing to provide at a specific price, time period, and conditions of sale.
SUPPORT ELEMENT	A collection of major Forest Service activities which complement the resource elements. There are five support elements: Protection, Lands, Soils, Facilities and Rural Community and Human Resources.
SUPPRESSION (FIRE SUPPRESSION)	Any act taken to slow, stop, or extinguish a fire. Examples of suppression activities include fireline construction, backfiring, and application of water or chemical fire retardants.
SYSTEM ROADS	See Forest System Road.

T

TARGET	A quantifiable output assigned to the Forest.

TEMPORARY ROAD	Those roads needed only for the purchaser or permittee's use. The Forest Service and the purchaser or permittee must agree to the location and clearing widths. Temporary roads are used for a single, short-term use, e.g., to haul timber from landings to Forest development roads, access to build water developments, etc.
THERMAL COVER	Cover used by animals to ameliorate chilling effects of weather; for elk, a stand of coniferous trees 40 feet or taller with an average crown closure of 70 percent or more.
THREATENED AND ENDANGERED SPECIES	Any species, plant or animal, which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Threatened species are identified by the Secretary of the Interior in accordance with the 1973 Endangered Species Act.
THREE-STEP SHELTERWOOD	An even-aged silvicultural system in which the old crop (the shelterwood) is removed in three successive cuttings in order to provide a source of seed and/or protection for regeneration.
TIERING	Refers to the elimination of repetitive discussions of the same issue by incorporating by reference the general discussion in an environmental impact statement of broader scope. For example, a project environmental assessment could be tiered to the Forest Plan EIS.
TIMBER	A general term for the major woody growth of vegetation in a forest area.
TIMBER BASE	The lands within the Forest that are suitable for timber production.
TIMBER PRODUCTION	The purposeful growing, tending, harvesting, and regeneration of rotational crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of Forest planning, timber production does not include production of fuelwood or harvest from unsuitable lands.
TIMBER STAND IMPROVEMENT (TSI)	All noncommercial intermediate cuttings and other treatments to improve composition, condition, and volume growth of a timber stand.
TRAILHEAD	The parking, signing, and other facilities available at the terminus of a trail.
TRANSITORY RANGE	Land that is suitable for grazing use for a period of time. For example, on particular disturbed lands, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage.

TREE OPENING	Any opening in the Forest cover created by the application of even aged silvicultural practices. The Northern Regional Guide established size limitations and guidelines to determine when cut acres are no longer considered openings.
TRESPASS	The act of going on another's land or property unlawfully.
TWO-STEP SHELTERWOOD	An even-aged silvicultural system in which the old crop (shelterwood) is removed in two successive cuttings in order to provide a source of seed and/or protection for regeneration.

U

UNDERSTORY	The trees and other woody species which grow under a more or less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth.
UNEVEN-AGED MANAGEMENT	The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection. Individual Tree Selection Cutting - The removal of selected trees from specified size and age classes over the entire stand area in order to meet a predetermined goal of size or age distribution and species composition in the remaining stand. Group Selection Cutting - The removal of small groups of trees to meet a predetermined goal of size distribution and species in the remaining stand.
UNREGULATED HARVEST	This harvest is not charged against the allowable sale quantity. It includes occasional volumes removed that were not recognized in calculations of the allowable sale quantity, such as cull or dead material and noncommercial species and products. It also includes all volume removed from unsuitable areas. Harvests from unsuitable areas will be programmed as needed to meet multiple use objectives other than timber production and for improvement of administrative sites.

UNSUITABLE TIMBER LAND	Lands not selected for timber production in Step II and III of the suitability analysis during the development of the Forest Plan due to (1) the multiple-use objectives for the alternative preclude timber production, (2) other management objectives for the alternative limit timber production activities to the point where management requirements set forth in 36 CFR 219.27 cannot be met and (3) the lands are not cost-efficient over the planning horizon in meeting forest objectives that include timber production. Land not appropriate for timber production shall be designated as unsuitable in the Forest Plan.
UTILITY CORRIDOR	See Corridor.
UTILIZATION STANDARDS	Standards guiding the use and removal of timber. They are measured in terms of diameter at breast height (d.b.h.) and top of the tree inside the bark (top d.i.b.) and the percentages of "soundness" of the wood.

V

VALUE, MARKET	The unit price of an output normally exchanged in a market after at least one stage of production, expressed in terms of what people are willing to pay as evidenced by market transactions.
VALUE, NONMARKET	The unit price of an output not normally exchanged in a market after at least one stage before consumption, and thus must be imputed from other economic information.
VARIETY CLASS	A classification system for establishing three visual landscape categories according to the relative importance of the visual features. This classification system is based on the premise that all landscapes have some visual values, but those with the most variety or diversity of visual features have the greatest potential for being or attaining high scenic value.
VEGETATION TREATMENT	Any activities undertaken to modify the existing condition of the vegetation.
VIABLE POPULATION	A population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population in the planning area.
VISITOR INFORMATION SERVICE (VIS) SITE	A site which provides interpretative information, (directional, historical, statistical) located at Forest historical sites, overlook sites, or special interest areas.

VISUAL QUALITY OBJECTIVE (VQO)	A desired level of scenic quality and diversity of natural features based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape. Preservation: In general, human activities are not detectable to the visitor. Retention: Human activities are not evident to the casual Forest visitor. Partial Retention: Human activities may be evident, but must remain subordinate to the characteristic landscape. Modification: Human activity may dominate the characteristic landscape but must, at the same time, utilize naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in middle-ground or background. Maximum Modification: Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background. Enhancement: A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists.
VISUAL RESOURCE	The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

W

WALLOW	A depression, pool of water, or wet area produced or utilized by elk or moose during the breeding season.
WATER YIELD	The measured output of the Forest's streams.
WATER YIELD INCREASE	Additional water released to the Forest streams as a result of Forest management activities.
WEEDING	Generally a cultural operation eliminating or suppressing undisturbed vegetation, mainly herbaceous, during the seedling stage of a forest crop, thus reducing competition with the seedling stand.

WET AREAS	Sites, often occurring at the heads of drainages, such as wet sedge meadows, bogs, or seeps. They are often referred to as "moist sites" and are very important components of elk summer range. Sites near water are important because the forage they produce is highly nutritious and heavily utilized by elk.
WETLANDS	Those areas that are inundated by surface or ground water with a frequency sufficient, under normal circumstances, to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands include marshes, bogs, sloughs, potholes, river overflows, mud flats, wet meadows, seeps, and springs.
WILDERNESS	Federal land retaining its primeval character and influence without permanent improvements or human habitation as defined under the 1964 Wilderness Act. It is protected and managed so as to preserve its natural conditions which (1) generally appear to have been affected primarily by forces of nature with the imprint of man's activity substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and confined type of recreation; (3) has at least 5,000 acres or is of sufficient size to make practical its preservation, enjoyment, and use in an unimpaired condition, and (4) may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest.
WILDERNESS STUDY	An analysis to determine an area's appropriateness, cost, and benefits for addition to the National Wilderness Preservation System.
WILLINGNESS TO PAY VALUE	The value that represents the amount a user of a good or service would be willing to pay rather than to go without it. Indications of willingness to pay may be obtained by direct questionnaires or indirectly by studies of payments for similar items in similar circumstances, or of related costs, such as transportation paid to get to point of use.
WITHDRAWAL	An order removing specific land areas from availability for certain uses.
WORK YEAR EQUIVALENT	This is 2,087 working hours. May be accomplished by one person working yearlong or several people filling seasonal positions.

Y

YARDING	The operation of hauling timber from the stump to a collecting point.

Z

ZONE OF INFLUENCE	A delineated geographic area within which the present and proposed actions exert an important influence on residents and visitors.

[illegible]

ZONE OF INFLUENCE A delineated geographic area within which the proposed and alternative actions exert an important influence on activities and resources.

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APPENDIX B Description of Analysis Process

APPENDIX C Roadless Area Evaluations

These appendices are published together as a separate document entitled Lolo National Forest FEIS Appendices.

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